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A resource exchange perspective of value added in venture capital firm / portfolio company network dyads

Sayed Ahmed Naqi
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**A RESOURCE EXCHANGE PERSPECTIVE OF VALUE ADDED IN
VENTURE CAPITAL FIRM/PORTFOLIO COMPANY NETWORK
DYADS**

This thesis is submitted in fulfilment of the
requirements for the award of the degree

DOCTOR OF PHILOSOPHY

from

UNIVERSITY OF WOLLONGONG

by

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2002**

AUTHOR'S CERTIFICATION

I certify that the substance of this thesis has not already been submitted for any degree and is not being currently submitted for any other degree.

I certify that any help received in preparing this thesis and all sources used have been acknowledged in the thesis.

(Sayed Ahmed Naqi)

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Sayed A. Naqi

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ABSTRACT

Small businesses are recognized for their potential role in advancing economic growth, generation of employment (Storey, 1994) and assistance in recovery from persistent recessions (Deakin, 1996). The important role played by venture capital in the formation and development of such new and high technology businesses is established and recognized (Kirchhoff & Phillips, 1998; Timmons et al, 1983). During the 1990s, venture capital has recorded extraordinary growth at the international level. The research on venture capital has not only lagged behind the development in this industry (Wright and Robbie, 1997) but has remained dominated by the United States.

Within the venture capital field, while researchers have, to some extent, already covered several aspects of venture capital operation, the post-funding era of the venture capitalists/portfolio companies remains a rich area for research. (Gorman and Sahlman 1989; Rosenstien et al, 1993; Stier and Greenwood, 1995; Gompers, 1998; Barney, 1994).

Venture capitalists usually claim that, unlike other financiers, they provide more than finance. This means that through active involvement in the portfolio company, they provide valuable assistance in areas like finance, networking, strategy formulation and operations. Research scholars, in recent years, have turned their attention to the confirmation of the substance of this claim. During the process of this research many factors have been uncovered which have some bearing on the value-added relationship between a venture capital firm and a portfolio company. However, the final verdict on the value-added role of venture capitalists has remained elusive.

Most of the research studies in the area of value-addition by venture capital firms have confined themselves to verifying whether certain factors, affect the relationship between a venture capital firm and its portfolio company. Their disparate findings seem somewhat disjointed and need to be fully coalesced into an integral whole. There has been a noticeable dearth of literature relating to the development of a theory, which explains the basic dynamics governing this relationship. This thesis is an attempt to fill this gap in venture capital research.

To make this research study more robust, a theoretical base is adopted. The resource exchange theory was found ideally suited to explain the relationship between venture capitalists and their portfolio companies. While this concept has been applied in some popular works, there have been only moderate attempts to link it with venture capital.

A model of the value-added relationship is built in this thesis. During the process of developing this model different factors affecting this relationship are identified, examined and classified. These factors are placed in a logical set-up within the basic model. An attempt is also made to explain the important role played by organizational resources in a value-added relationship.

While the validity of the proposed resource-exchange model could not be proven beyond doubt, it has been established that the resource pool of venture capital firms and their portfolio companies differ. The relevant resource pool may not be the only reason behind a value-added relationship, however, venture capital firms consider themselves to be better equipped if they have more experience in the industry of the portfolio company. Overall, venture capital firms' involvement is guided by perceived need rather than their resource pool. While willingness to be involved depends on other factors, firm policy is the primary motive behind an active involvement of venture capital firms in their portfolio companies.

1 Chapter 1: The Problem and its Setting

1.1 Background Information

Venture capital, sometimes also called risk capital or private equity, is one source of equity investment. Venture capital, in essence, has evolved as a result of an equity supply gap, which exists for high-risk ventures with high prospective growth and consequent high returns. Its origination was informal (Batterson, 1986; Bygrave and Timmons 1992; Clark, 1987) and it was primarily dependent on wealthy individuals called “angels” as suppliers of funds, as equity investors without intermediaries (Seymour and Wetzel, 1981). The initial effort to recognise and institutionalise venture capital as a formal alternative source of financing began in the United States in the mid 1940s with the establishment of the American Research and Development Corporation (ARD), a firm dedicated to raising funds from different sources and using these as an equity investor in new ventures. The success of the Digital Equipment Corporation, one of ARD’s portfolio companies, catapulted ARD into the limelight. The venture capital industry has since revolutionised the United States economy by backing start-up companies like Microsoft, Netscape, Yahoo, Federal Express, Intel etc.

Although a venture capital firm fills a much needed funding gap by financing growing companies, a review of the detailed operations of venture capital reveals that venture capital firms provide more than finance to their portfolio companies. As experienced professionals, venture capitalists pass on their knowledge and experience to the entrepreneurs through active involvement with their portfolio companies. The importance of this aspect of a venture capital firm’s work has prompted researchers to call a venture capitalist a relationship investor, builder, innovator and partner, sounding board member and business consultant, coach/mentor, financier and friend/confidant (Fried and Hisrich, 1994; Sapeinza and Timmons, 1989;

Landstorm, 1990; Lorenz, 1989). Research shows that the most important contributions of venture capital firms relate to the area of financial advice, strategy formulation, crisis management and access to business networks (MacMillan et al.; 1988, Gorman and Sahlman, 1989; Rosenstien et al., 1989; Ehrlich et al., 1994; Elango et al., 1995). Although the venture capital firms' major involvement in the portfolio companies is by virtue of a seat on the board of directors, they may also keep in regular contact through telephone and formal or informal meetings (Fiet, 1995) or through reports submitted by the portfolio companies (Sweeting, 1991).

1.2 Need for this research

Over the years, researchers have tried to measure the results of venture capital firms' involvement in their portfolio companies. This research activity gained particular momentum from the late 1980s. The attempt at measuring venture capital firms' involvement contribution, termed value added, in the portfolio company has been tried with multiple approaches. The criteria of value added is taken to be the time spent by a venture capital firm with a portfolio company (Gorman and Sahlman, 1989), the number of activities in which the venture capital firm is involved (Rosenstein et al., 1989; Pandey and Jang, 1996; MacMillan et al., 1988) or the frequency of venture capital firm/portfolio company interaction (Sapienza and Gupta, 1994; Sapienza, 1992). Moreover, the value added findings are alternatively based on the survey of venture capital firms' perceptions (MacMillan et al., 1988) or portfolio companies' perceptions (Fried and Hisrich, 1994; Rosenstein et al., 1993; Rosenstein et al., 1989, Rosenstein et al., 1990) or both (Sapienza and Timmons, 1989; Sapienza, 1992; Sapienza et al., 1996). Very few researchers have relied on the case study method (Stier and Greenwood, 1995). Finally, research has also been carried out in terms of performance evaluation of the portfolio company after initial public offerings.

The research, so far, has largely remained inconclusive about the value-added contribution of venture capital firms. The problem has been further complicated by the findings that venture

capital firms, who are more involved in their portfolio companies, do not necessarily perform better themselves nor do their portfolio companies (MacMillan et al., 1989). Most of the research on value added has confined itself to an application of agency theory, which although useful, has been deficient in respect to its appropriateness to venture capital firms/portfolio companies' relations because it does not explain the possibility of opportunistic behaviour by the principal (venture capital firm). This thesis, thus digresses from the often trodden path of the application of "agency theory" (Amit et al., 1990, Gompers, 1995; Sahlman, 1990) and provides a new perspective to this question.

A number of research studies have been conducted which have tried to measure the value-added relationship and determine factors, which can possibly effect the value added. During this process, the influence of many factors has been confirmed. However, there has been little effort to classify these factors and set up a relationship between them in an over-all model, which explains the value-added process.

Apart from value added, this thesis also fulfils the need for research in markets other than the United States and Europe (Frear and Wetzel, 1990). Some of the Asian markets have recorded remarkable growth in venture capital during the 1990s. However, not much research seems to have been conducted in Asian countries in the area of venture capital.

1.3 Objectives of the study

This study supports the view that the venture capital firms/portfolio company's relations could be seen from the resource-based perspective. It also argues that the value added by venture capital firms, in portfolio companies, is a function of resource exchange.

A critical component of the success of a venture is the accumulation of resources from the environment, which helps the business to exploit available opportunities. The fate of venture

capital firms is inextricably linked with the performance of their portfolio companies. While venture capital firms add a vital resource of finance to the resource pool of a portfolio company, their contribution towards portfolio companies extends beyond finance. Because of the nature of their work, venture capital firms acquire skills in developing strategies, forming management teams, timing the development of the companies and building up a network of relationships. These skills or resources are vital for a growing company. Thus, venture capital firms will add to the probability of success of the portfolio companies by contributing to their resource pool. However, as explained in this thesis, this resource transfer/exchange depends on many factors such as relationship characteristics, resource characteristics and more importantly on the willingness of the parties to enter into a resource exchange relation. This thesis, however, is not an exercise in reinventing the wheel and therefore, the past research conducted in the area of venture capital has been accepted as relevant and a useful starting point. During the process of explaining the relationship between venture capital firms and portfolio companies, a holistic model has been constructed and past research conducted in this area has been shown to contribute logically toward the framework of resource exchange theory. Lastly, part of this model has been tested in Singapore and Hong Kong, and during the process, valuable insight gained into peculiarities of venture capital in these countries.

This dissertation basically addresses the following three-part research question: Does resource exchange theory offer a useful perspective for studying inter-firm relations? Does the value addition as perceived by venture capital firms depend on the resource exchange relations between venture capital firm and portfolio companies? Does the Asian interpretation of venture capital allow a wider applicability for the findings of this thesis?

1.4 Contribution to venture capital literature

This study is expected to contribute to the existing literature on venture capital in several ways. It provides an insight into how the involvement of venture capital firms in their portfolio companies can be seen and analysed through a resource exchange perspective. Moreover, while past research studies have identified isolated factors as they effect the value-added relationship between venture capital firms and their portfolio companies, this study attempts to construct a holistic model of this relationship. A three dimensional model has been put forward which include the characteristics of venture capital firms/portfolio companies, the characteristics of relationships and the characteristics of resources. Furthermore, since this study is conducted in Asia it also adds to a very limited literature on involvement of venture capital firms in their portfolio companies in Asia.

1.5 Limitation of this study

It was felt that the survey method was the most appropriate for this research. Similar studies have been conducted in other countries, mostly using an empirical approach, and have provided a valid standard for comparisons of the findings. Because the measures in this study rely on the perception of the venture capital firms, caution must be exercised in their application and interpretation. Bias and inaccuracy are potential threats wherever perceptual measures are used. Apart from the language difficulties, this study acknowledges the differences in definitions and concepts that are used in different cultural settings. Such problems exist whether investigators are using primary or secondary data sources.

1.6 Defining Venture Capital

As discussed in Chapter 2 of this thesis, there is no generally accepted definition of venture capital. The term venture capital has been used widely and its definition varies between countries and even regions within countries (Venture Capital Journal, 1989). Generally speaking, venture

capital is third party equity financing provided with management support to potentially high growth companies where the main objective is capital gain. In Asia, this term is used rather loosely and there is little attempt to draw a difference between private equity and venture capital. Thus all third party equity investment in unlisted companies is considered venture capital. Since this study is being conducted in Asia the same concept will be followed unless otherwise indicated.

1.7 Structure of the Dissertation

The remainder of this dissertation consists of eight chapters. Chapter 2, is used to present background information on the venture capital industry in Asia and the little dragon economies, traces industry history and delineates differences and similarities across countries. In chapter 3, research that has, so far, been conducted in the area of involvement of venture capital firms with portfolio companies is reviewed. The relationship of the venture capital firms with their portfolio companies, drawing upon the resource-based theory, is explained in chapter 4. The research model is also presented in this chapter. The development of propositions, which primarily rely on the research model, is explained in chapter 5. Chapter 6 contains the research methodology including a description of the sample and data collection method. Chapter 7 and 8 contain the result of analysis and a discussion on the findings. The dissertation concludes with chapter 9. It also contains a discussion of the practical implications of the research findings, has an outline of the limitations of this research and delineates directions for future research in this area.

2 Chapter 2: Industry Review

2.1 Introduction

Because of the diversity of the venture capital industry, it is debatable whether existing research studies on venture capital, predominantly undertaken in Europe and the United States, are applicable to Asian countries. As this study is based on Asian venture capital markets and as there is sufficient evidence that the local venture capital culture has a profound effect on the venture capital strategies used in each market (Jeng and Wells, 2000), a relevant industry review is appropriate. In this chapter, the history of venture capital in Asia and the progress and structure of the venture capital industry in the “little dragons¹” countries is traced.

It needs to be mentioned that existing research cannot be termed irrelevant because the concept of formal venture capital sprang from the United States and most Asian countries have tried to emulate this model. There also exists an extensive relationship between different venture capital funds at an international level, which can produce similarities, to some extent, in their operations².

2.2 Defining Venture Capital

The term venture capital is used far more frequently than it is understood (Cornelius, 2000). The indiscriminate use of this word is almost threatening to relegate it to the status of evocative metaphor, applied so loosely that it ceases to hold any meaning. The generally held concept of venture capital is based on the United States model, largely because the institutionalisation of venture capital started in the United States. It is still the largest venture capital market and many

¹ Singapore, Hong Kong, Taiwan and S. Korea together are also referred to as “Little Dragons” (Vogel, 1993) and “Asian Tigers” (Kim, 1998).

international venture capital markets have developed based on the United States model. Venture capital has been defined as broadly as “the investment by professional investors of long term, risk equity finance where the primary reward is eventual capital gain rather than interest income” (Wright and Robbie, 1997) or as precisely as “long term financing (equity or potential equity) leveraged with management support and provided to unlisted, potentially high growth businesses” (Cornelius, 1992). Between these two standpoints, there is an array of definitions (EVCA, 1998; AVCJ, 1999; Pratt, 1998; OECD, 1999).

The problem, that there is no generally accepted definition of venture capital, has been compounded by the internationalisation of this term and hence multiple perceptions of venture capital, which are sometimes, downright erroneous. It is, however, quite difficult to define precisely what venture capital means. According to the Venture Capital Journal (1989), there is no accepted definition of venture capital even within a single country, let alone worldwide. The majority of the literature on regional comparisons of venture capital, perhaps recognising the futility of the exercise, takes the situation as it is and does not make a clear attempt to delineate differences or distinguish between different interpretations (OECD, 1996; Wright et al., 1999; Millhaupt, 1997).

Available definitions of venture capital primarily derive their inspiration from the classical structure that originated in the United States, based on the pioneering experiment of General Georges Doriot. The idea caught on and venture capital became a buzzword. By the late 1980s, venture capital firms within the United States were stretching the term to include financial practices which were not venture capital in the classical sense. Some called this practice “opportunism” by investment bankers (Bavaria, 1992). These new practices collided with

² A result of institutions is that organisations often develop in a similar isomorphic manner (Slack & Hinings, 1994).

substantially altered market factors including the poor performance of venture capital firms during the period. Venture capital, even within the United States, started losing its classical characteristics. It was not patient and brave money any more (Bygrave and Timmons, 1992).

The institutionalised venture capital idea, primarily borrowed from the United States, became really popular in Asia in the early 1990s when the venture capital industry in the United States itself was undergoing a change in strategic focus. Thus, the picture of venture capital in Asia, which emerges from the available literature, is much broader in concept than would be encompassed by definitions of venture capital (Coutarelli, 1977; Brophy, 1986). Bygrave and Timmons (1992) have even argued that countries, except the United States, never really developed classical venture capital at any stage. In Asian countries, even in cases where a venture capital market has a significantly different structure³ from the traditional model, the term signifies a broader concept (Borton, 1992). Although exact definitions might vary, broadly speaking, venture capital in Asia primarily refers to “equity investments in growing unlisted companies” (AVCJ, 1999). The investment scope covers all industries of all sizes at virtually all investment stages. Since, like Asia, Europe constitutes many diverse economies, the European notion of venture capital is closer to the broader Asian viewpoint (EVCA, 1998; AVCJ, 1999). Although venture capital is usually referred to as a subset of private equity, it seems that in Asia and Europe these terms are used interchangeably.

³ A comparison of Japanese venture capital with the United States model provides a classic example of different venture capital industry structures. The most common form of venture capital in the United States is liability limited partnership accounting for about two third of venture capital invested in 1988 (Barry, 1994). Almost all Japanese venture capital firms are subsidiaries or affiliates of large banks or insurance companies. This arrangement is similar to what is termed corporate venture capital in the United States (Cornelius, 2000). While United States venture capital firms act as conduits for channelling funds raised from other sources, Japanese venture capital firms mainly invest their own funds (Kato et al, 1995). Unlike United States venture capital, Japanese venture capital is not associated with active monitoring. In fact, until 1995, Japanese law prohibited employees of venture capital firms from being on the board of their portfolio companies (Hamao et al, 2000). The Japanese venture capital market is also unusual for the time it takes for young companies to be listed. This period, which is around 30 years in Japan, is about 4-5 years in the United States (Hulme, 1994).

Although most of Asia and the United States have followed almost similar paths toward the transformation of venture capital from its initial position as technology-based investment in new ventures to a broader range of investments which include mature companies (Cornelius, 2000), the usage of this term within the two regions carries a different emphasis. The National Venture Capital Association of the United States (NVCA, 2000)⁴ defines venture capital as “money provided by professionals who invest alongside management in young, rapidly growing companies that have the potential to develop into significant economic contributors”. While making a clear reference to early stage companies and technology, it goes on to explain that a “venture capitalist may invest in a company throughout the company’s life cycle and therefore some funds focus on later stage investing... At the other end of the spectrum, some venture funds specialise in the acquisition, turnaround or re-capitalisation of public and private companies that represent favourable investment opportunities.”

Venture capital markets continue to develop and readjust across regions and countries. There has been an increasing trend in the networking of global venture capital, sometimes referred to as “strategic alliances”. These networks create pools of capital by raising funds from traditional venture capital resources and investing them in ventures throughout the world. The result is a global information exchange and joint venture relationships among European, American, Australian and Asian companies. Thus, internationally, the perception of what constitutes venture capital is undergoing a change as venture capital firms reach a compromise on their different viewpoints. With the concept of venture capital being continually adjusted in different countries (Lau, 2000), any comparison between markets needs to be viewed in the light of how venture capital is currently perceived structured and is being transformed.

⁴ Definition available on official website, <http://www.nvca.com>, accessed on January 17, 2000.

2.3 Growth of Venture Capital in the Asian Region

Like any other part of the world, equity financing is not new to the Asian region and has been around for, possibly, hundreds of years. In East Asia the “huay”, an informal system of banking involves a group of people who each subscribe to one or more shares in a common fund through a fixed subscription. These funds are invested in different businesses (Choy, 1990). In South Asia, this kind of capital is supplied informally by friends, relatives and family members. The idea of equity investment, although rarely practiced in the Muslim culture of the Middle East on a wider scale, has always been present in the shape of “Modaraba”, third party equity investment (Harper, 1997). Traditionally, most businesses in Asia have been family owned over generations (Chen, 1995; Brown, 1995). Third-party proposals to invest in a company’s future are not considered acceptable by the family owning that business. In most of Asia, family members usually contribute to a business. Smaller and newer ventures are earmarked for young family members so, when venture capital was introduced into this region, many questioned the need for the venture capital market and doubted whether it had a future (Montagu, 1988 b). From the perspective of the Asian businessman, moving beyond the known circle of investors was a relatively new experience.

When venture capital, primarily backed by businessmen from the United States, came to Asia during the early 1970s, few entrepreneurs, even when strapped for cash, considered approaching a venture capital firm. The alien concept bred suspicion and tapping equity from family and friends remained the driving forces behind company growth and security. The initial United States venture capital investment in Asia faltered. Cultural differences were considered part of the reason (Morrow, 1991). The investors, seemingly, could not develop the necessary long-term relationships with clients in Asia that would ensure successful investments (Mantagu-Pollok, 1988). Western style due diligence did not seem to work and foreign investors also had a hard

time coping with local accounting practices (Pohndorf, 1997). After this initial setback, any real prospect of venture capital development in Asia depended on overcoming cultural barriers and involving local participation on the supply side of this market.

In the mid-1970s, the role of development banks, which were widely seen by respective governments as a tool for national economic development in developing countries, increased. Asian development banks, backed by the government of the country, started looking for more creative financing arrangements and opportunities. Venture capital was identified as one possible mode of operation. By the early eighties there were close to 100 venture capital firms operating in the Asian region (Kravits, 1985). Soon a formal institutionalisation of the market was underway. There were, however, no assurances that traditional venture capital was likely to succeed without problems in the unique Asian environment.

During the 1980s Hong Kong, Taiwan, Singapore, and South Korea experienced tremendous economic growth. Combined, the exports of these four nations were about 80 percent those of Japan (Schilit, 1992), the highest exporting nation in Asia. As these countries moved from a labour-intensive manufacturing environment to technology-oriented undertaking, the need for venture capital became more obvious and growth in the technology sector formed the basis for such activity (Hou, 1988). Continued development, especially in East Asia, produced cash rich companies eager to invest in start-up technologies at home or abroad in order to diversify their technologies and further their technological development. There was an increasing awareness, among respective governments, that venture capital played a very real role in the economic development process. There were some warnings that the American style system could not be copied by any other infrastructure, as evidenced by numerous failed attempts to mirror the United States model in Europe and Japan (Pratt, 1990). Asian countries, including the little

dragons, continued to move forward toward what they considered to be hi-tech venture capital projects. There is today, a large amount of private money going into venture capital in these countries. In 1997 these countries had a combined investment portfolio of more than USD 10 billion.

2.1 Little Dragons-Venture Capital Investment Portfolio (1997)⁵

	USD millions	%age of Total Venture Capital Investment in Asia
Hong Kong	4,691	22.86%
South Korea	2,490	12.14%
Singapore	1,574	7.67%
Taiwan	1,277	6.22%
Total	10,032	48.89%

Modified from AVCJ, 1999

Venture capital investment in the little dragon countries accounts for almost half of the venture capital market in Asia. Venture capital is not only well entrenched in these countries but has a comparatively successful history in terms of growth. Compared to the rest of Asia, the larger size of venture capital in these markets is far beyond their comparative size in terms of area and population. Together the little dragon countries provide a very fertile ground for further research in the area of venture capital.

2.3.1 Development of Venture Capital Industry

Governments in little dragon economies, joined by countries like Hong Kong, which do not usually intervene in the capital markets (Lasserre and Schütte, 1995), have taken an active stand and a variety of approaches to foster and monitor venture capital development. Respective governments have not only targeted and promoted specific industries through grants and tax incentives but also, in some cases, taken up the role of venture capital firms. Venture capital in

most of these countries has been used as a development tool and in most cases governments have played a key role in deciding what qualifies as venture capital. In Taiwan, for example, the Ministry of Finance defines venture capital primarily as equity investment in growing unlisted companies. It goes on to limit venture capital by specifying the investment focus as domestic technological firms, domestic or foreign venture capital firms and domestic general manufacturing industries (Pandey and Jang, 1996).

The first example of active government support was provided in 1983 by the Taiwanese government, when it enacted venture capital regulations. It provided investors with generous tax breaks, handing local investors tax credits that effectively gave them back 20% of any money invested in hi-tech. This was followed by investment by the state-run Bank of Communication in eight funds. The government regulated the investment through tax credits, which are only available to companies that invest in 'strategic' hi-tech areas like personal computing technologies, precision machines, or biotechnology. Government institutions such as the Bank of Communications (BOC), the Development Fund of the Executive Yuan and the China Development Corporation (CDC) are themselves large investors in hi-tech firms and venture funds (Montagu-Pollock, 1990-91).

Sensing high investment returns, many venture capital firms in Taiwan forfeited tax concessions and diversified investments into the service and manufacturing sectors. The Taiwanese government in the early 1990's eased restriction on investors wishing to reach outside of the high-tech area. The Government also moved away from seed-stage investment in favour of more mature companies. During 1990-91 the Taiwanese venture capital industry consisted of 12 venture capital firms with a total capital under management of USD 250 million (Asian Finance

⁵ AVCJ (1999) distinguishes and provides separate data about venture capital pool (Capital under management or committed

b, 1990-91). Annual fund raising in the Taiwanese venture capital industry took off in the mid 1990s, and grew more than 15 times between 1994 and 1997. The number of venture capital funds increased to 74 and the total venture capital pool or venture capital under management touched USD 2 billion by 1997 (Guide to Venture Capital in Asia, AVCJ, 1999).

The story of venture capital is similar in Singapore. The Economic Development Board (EDB) has been supporting venture capital since 1984 giving generous grants, making investments and approving Pioneer Service Status, which gives venture capital funds corporate tax holidays for up to 10 years. Getting the EDB's backing involves transferring technology to Singapore. If a portion of a fund's capital, as approved by the EDB on a case-to-case basis, was used for seed finance, the EDB also allowed investors to write-off up to 100% of capital losses against other income. The EDB itself, a particularly large investor in venture capital, intended to exploit opportunities in strategic industries. Venture Capital in Singapore though privy to Government support, differs from the Taiwanese example in one important way. Its venture capital strategy is outward looking. Investing in other countries in the region is acceptable as long as the EDB identifies a link between the investment and the future development of the home economy. The Government, showing its bias for high-tech start-ups, has geared its tax and legislative concessions to this sector. Any investment in a venture capital project, therefore, is limited by financial necessity, to the Government's approved list. Singapore's venture capital industry tends to move cautiously within Government guidelines and consequently its growth is less spectacular than that of Taiwan, however, it has grown at a continuous pace. During 1990-91 Singapore had 10 venture capital firms with a total venture capital pool of USD 300 Million (Asian Finance, 1990-91). During 1997 the total venture capital pool in Singapore exceeded USD 4 Billion with around 60 venture capital funds (Guide to Venture Capital in Asia, AVCJ, 1999).

The South Korean example is similar to the scenarios in Taiwan and Singapore. Venture capital financing found expression in Korea as early as 1973, with the creation of the Korea Technology Advancement Corporation (KTAC) to commercialise the research and development (R&D) results of the Korea Institute of Science and Technology (KIST), a public R&D Institute. Not until the early 1980s did a booming interest in high-tech start-up industries set the funding wheels firmly in motion. The Government set up three firms to further technological research and development. Although these firms ended up lending rather than investing in equity, venture capital had begun. In 1986, the South Korean Government passed the Small and Medium Enterprise Start-up Support Act (SMESS), which gave tax benefits on the capital gains of start-up investment companies. In the same year its sister act, the New Technology Financial Support Act (NTFSA), enabled firms to make investment funds that could absorb idle private capital. Initially, South Korea created a venture capital industry highly focused on early-stage, hi-tech financing, because the Government's strict incentive conditions ensured that 92% of funds went into early-stage companies. Although the Government remains the chief sponsor of venture capital projects, the focus on early stage business has drifted away. The Government increased the allowable age of companies in which venture capital could be invested from three years to five years in 1989, and permitted partial investment in mature companies (aged more than five years) in 1992. Rules were relaxed further after local funds found themselves in trouble. New laws granting tax breaks to venture investors and lifting the usual ceiling on foreign investment came into effect in 1997. Foreigners were allowed to purchase stocks of more than 55% in a company listed on the Korean Stock Exchange. This ceiling was completely abolished the next year resulting in a 160% increase in foreign ownership (AVCJ, 1999). In 1998, the South Korean Government also allowed pension funds, which at that time managed more than USD 40 billion, to invest in start-ups alongside a venture capital firm. An important feature of the Korean

venture capital market is that local players, thanks to regulatory barriers and resistance to outsiders, have long dominated this market. During 1990-91 about 33 venture capital firms were operating in South Korea with funds under management of USD 900 Million. The total venture capital pool has since grown to USD 1.9 billion being managed by 128 funds at the end of 1997.

Among the little dragons, Hong Kong was the last to provide incentives to hi-tech industry development and the Government clung to its laissez-faire traditions for a long time. As a result Hong Kong saw its industries increasingly overtaken by hi-tech developments elsewhere. Requests from Hong Kong entrepreneurs triggered the Government into action in 1992 and the Industrial Department announced a large allocation for applied research and corporate development projects on a dollar-for-dollar 'matching' basis with private investment. The Industrial Technology Centre provides funds for start-up hi-tech ventures, and provides support facilities and low-rent space for hi-tech firms. Hong Kong assumed new importance, after being taken over by China, as a springboard into China. Because large amounts of venture capital invested in China are routed through Hong Kong, the growth of venture capital in Hong Kong looks spectacular. After Japan, Hong Kong is the largest single venture capital base in Asia. Its venture capital pool was more than USD 9 billion with 91 venture capital funds in 1997.

2.3.2 Structure and Organisation

Compared to the United States, where venture capital took off in the late 1970s, the institutionalisation and increased importance of venture capital is largely a phenomenon of the 1980s and 1990s in most European countries. Little dragon economies recorded a comparatively visible venture capital market only during the 1990s. Some venture capitalists believe that, compared to other regions, venture capital in these countries is still in its infancy (Wong, 2001).

Thus one of the common features of the venture capital industry in little dragon economies is that each country is in similar phase of growth⁶.

Venture capital in little dragon economies, as a whole, may be classified into several general areas. First, there are start-up and hi-tech funds, which may be privately owned, or government sponsored. Privately owned funds are primarily based on the United States model and driven mostly by foreign investors, though managed by local professionals. The government-sponsored investment funds offer tax and regulatory concessions to investors who agree to back projects deemed worthwhile by government planning authorities. Secondly there are funds that are involved in corporate restructuring. These funds seek out more established enterprises with proven track records. Instead of providing seed money, they tend to offer capital for a firm's expansion. In contrast with the 5-10 year commitments pledged by traditional venture capital firms, they prefer 2-3 year turnovers with an eye on acquisition or consolidation of a group of like enterprises. Third, there are infrastructure funds. These funds mostly invest in infrastructure projects like bridges, docks and highways. Another category gaining importance can be termed "privatisation funds". Privatisation funds exploit opportunities created by respective governments' increasing attention to privatisation, making available enterprises, which are undercapitalised, and/or desperately need modernisation. A more recent trend visible in the global venture capital area, including this region, has been that of "networks," sometimes referred to as "strategic alliances." These networks are linkages between venture capital companies around the world. These networks create pools by raising money from pension funds, insurance

⁶ The venture capital industry is viewed as cyclical in nature (Fried and Hisrich, 1992). The experience of the United States exhibits an association between the venture capital industry and the stock market, whereby, the venture capital industry recorded accelerated growth in a bull market (OECD, 1997). The United States venture capital market performed poorly between 1987-1991 with growth returning in 1992. The venture capital market in most of the European countries is comparatively new and so far has seen only one downturn between 1991-1993.

companies, banks, corporations, and wealthy individuals in much the same way that traditional American venture capital firms do, and then invest these funds in ventures throughout the world.

In addition to established venture capital funds, other venture capital players include;

- (a) private equity/family wealth where corporate empires are essentially family controlled vehicles;
- (b) private equity and wealth channelled through private bankers, off-shore trusts and tax efficient vehicles;
- (c) and private investment clubs consisting of friends or co-investors. For example, overseas Chinese networks.

The actual availability of venture capital is difficult to measure precisely because of the peculiar features of individual countries exacerbated by issues common to all venture capital markets. Since venture capital firms in little dragon countries tend to invest overseas, the number of firms is not a true reflection of the available capital in a specific market. Most of the data is supplied by respective governments and expressed in terms of their own currency. Since the rate of exchange applied depends on the type of rate e.g. spot, inter-bank etc, the source of exchange rate information and the chosen point in time, there might be some differences in reported amounts in different articles and research studies (AVCJ, 1999; Asian Finance 1990-91; Phalon and Katiyama, 1988; Pandey, 1996; Rah et al., 1994). Moreover, some venture capital firms are

engaged in venture capital intermittently. Venture capital estimates thus, may differ depending on the source⁷.

2.2 Little Dragons- Total Venture Capital Pool (USD Millions)

	Hong Kong	Singapore	S. Korea	Taiwan
1991	N.A.	868	1,547	412
1992	N.A.	896	1,629	470
1993	N.A.	1,013	1,687	508
1994	N.A.	1,833	1,902	562
1995	N.A.	3,164	2,567	696
1996	8,019	3,981	3,224	1,336
1997	9,632	4,468	1,857	1,913

Modified from AVCJ, 1999

2.3 Little Dragons –Annual Venture Capital Investment (USD Millions)

	Hong Kong	Singapore	Korea	Taiwan
1992	N.A.	120	111	61
1993	N.A.	186	111	148
1994	N.A.	236	443	132
1995	N.A.	240	745	216
1996	1183	461	1,139	429
1997	778	388	920	643

Modified from AVCJ, 1999

It appears that in these countries, the total venture capital pool has increased at an average annual growth rate of more than 10% between 1991-96. 1997 has proven to be an eventful year in the history of venture capital in Asia. The growth of venture capital slowed down considerably. South Korea was the hardest hit in terms of total venture capital pool. Except for Taiwan, venture capital investment declined in all countries.

⁷ The primary source for data on Asian venture capital in this thesis is “The Guide to Venture Capital In Asia-1999” published by Asian Venture Capital Journal. Further calculations have been made to make data comparable across countries. Some mistakes in AVCJ data were pointed out and the data has been rectified through later correspondence. Minor differences between AVCJ and this thesis remain because of rounding off figures and differences in applicable exchange rates. The details are recorded in Annex 1.

At the end of 1997 there were about 350 venture capital funds operating in little dragon countries. These funds had an average capital under management of around USD50 million. There are significant differences in fund sizes between these countries. In Hong Kong the average fund manages more than USD 100 million whereas in South Korea it is less than USD15 million. The venture capital funds were managing around USD28 million of average investment portfolios comprising 13 projects each. More than 1500 professionals were working in the venture capital industry in the little dragon countries with each fund being managed by approximately 4 professionals on average. This means that each professional is handling an average investment portfolio of a little more than USD6.6 million and about 3 projects. As a percentage of GDP⁸ the size of the venture capital market in Singapore or Hong Kong is bigger than that in South Korea or Taiwan.

Although no specific data is available for the little dragon countries, research indicates that mezzanine and turnaround funds in Asia are larger in comparison to funds focussing on early stage investments as are funds with a regional investment focus (Aylward, 1998). Moreover, funds that have parent company involvement, or are comparatively older, tend to be smaller as measured by the proportion of equity to funds raised.

2.4 Little Dragons-Venture Capital Investment by Financing Stage (1997-USD Millions)

Country	Seed	Start-up	Expansion	Mezzanine	Turnaround	Buyout	Others
Hong Kong	206	1,618	2,186	113	23	469	75
South Korea	239	493	1,148	374	154	82	0
Singapore ⁹	57	381	699	379	33	25	0
Taiwan	97	208	642	309	14	6	0
Total	599	2,700	4,675	1,174	225	583	75
Percentage Share	5.97%	26.92%	46.60%	11.71%	2.24%	5.81%	0.75%

Modified from data provided by AVCJ, 1999

⁸ Venture capital pool in Singapore and Hong Kong is more than 1% of their GDP.

⁹ According to the AVCJ Directory the seed and Mezzanine (Pre-IPO) investment in Singapore is 3.6% and 24% respectively whereas according to a Singapore government survey (1999) available on the Internet, it is 34% and 12% respectively. AVCJ stands by its data. See Annex. 1 for details.

Within the little dragon countries, venture capital is primarily directed toward expansion projects instead of start-ups and seed stage projects. Venture capitalists in these countries “... do not invest in start-up or young stage [sic]. We see some American style in South Korea, Taiwan and Singapore, but most cases are large sized private equity funds’ investments in stabilised and proven companies for their growth or expansion purpose”¹⁰. The reason usually forwarded for this difference is the small amount of money that goes into R&D spending in these countries. For example, Hong Kong spends only 0.1% of GDP on research and development (Slater, 1998). Individual countries exhibit diverse trends in the distribution of venture capital according to the stage of maturity of portfolio companies. About 40% of venture capital is invested in seed and start-up financing in Hong Kong whereas in Taiwan it is 24%.

2.5 Little Dragons- Venture Capital Investment by Source of Finance (1997-USD Millions)

	Corporations	Private Individuals	Pension Funds	Government Agencies	Insurance Companies	Banks	Reinvestment (C. Gains)	Others
Hong Kong	2,435	164	605	47	957	216	0	267
Korea	921	77	32	249	57	199	90	864
Singapore	691	93	55	138	101	346	0	150
Taiwan	852	212	38	50	61	38	0	26
Total	4,899	546	731	484	1,176	800	90	1,307
Percentage Share	48.83%	5.44%	7.29%	4.83%	11.24%	7.97%	0.89%	13.02%

Modified from data provided by AVCJ

As for source of funding, little similarity appears between countries except for the fact that corporations provide a large part of venture capital funds. In Hong Kong and Taiwan corporations account for more than 50% of venture capital. In Singapore and South Korea the government’s share is comparatively larger with close to 10% of venture capital coming from government agencies. This fact seems to suggest that governments, in general, have relied more

¹⁰ Personal correspondence: Jung-Kyoo Yang, Chief International Business Dept., Korea Technology Corporation, South Korea, March 18, 1999.

on measures to promote venture capital rather than actual supply of funds. In Singapore, banks are the second largest source of venture capital (22%) whereas in Hong Kong insurance companies are the second most important source of venture capital. Taiwan is conspicuous for a very large proportion (16.6%) of venture capital coming from private individuals. Except for Hong Kong, pension funds do not account for more than 10% of venture capital in any country. South Korea is likely to see an increased contribution from pension funds following permission by the South Korean Government to allow pension funds to invest in venture capital (Thompson, 1999).

2.6 Little Dragons-Venture Capital Investment by Industry- (1997-USD Millions)

	Hong Kong	Korea	Singapore	Taiwan	Total	%age
Consumer Related	1,004	167	165	20	1,356	13.52%
Computer Related	145	261	201	365	972	9.69%
Electronics Related	99	391	249	495	1,234	12.30%
Industrial Products	938	628	178	94	1,838	18.33%
Medical/Biotechnology	145	50	133	13	341	3.40%
Communications	615	252	182	97	1,146	11.43%
Energy	202	37	39	8	286	2.85%
Transportation	432	79	26	31	568	5.66%
Construction	647	86	131	8	872	8.69%
Financial Services	103	40	73	41	257	2.56%
Other Services	127	127	78	20	352	3.51%
Other Manufacturing	230	374	119	84	807	8.05%

Modified from data provided by AVCJ, 1999

Overall, over one half of the venture capital is distributed between industries relating to electronics, consumer products, communications and industrial products. Sophisticated technology areas like biotechnology and computers account for only a little more than 13% of venture capital investments. There is a broad spectrum of investment strategies in individual countries. In Hong Kong and South Korea a larger portion (more than 20%) goes to industrial products. Hong Kong stands out for its comparatively larger investments in consumer related

products. Only Taiwan exhibits industry concentration with 65% of venture capital invested in computer related and electronics industry.

Compared to Taiwan, venture capital in other countries is more international in nature. An investment portfolio of a typical venture capital firm may include an array of projects of a similar bent from more than one country. Risk diversification, is usually put forward as a reason for this strategy of regional rather than local investment (Stine, 1990; Meyer & Shao, 1995). Previous research shows that venture capital firms do not normally seek risk diversification by industry, stage of maturity of portfolio companies or complexity of technology (Gorman and Sahlman, 1986; Cornelius, 1992)). Thus, geographical diversification can be a valid reason for this strategy (Stine, 1990).

The venture capital market is only a decade old in little dragon countries and has been affected by a recent crisis with most Asian stock markets producing negative returns (Perlitz, 2000). Given the impact of a venture capital downturn, venture capital performance vis-à-vis public equity cannot be examined fairly (Scheela et al., 2000; Pohndorf, 1997). However, some authors claim that despite the industry's shorter record, and the inherent risks that accompany any investment, the internal rate of return (IRR) makes venture capital in Asia a worthwhile endeavour for an investor (Lasserre and Probert, 1994; Tanaka, 1994; Payne, 2000). For example, although no research data is presented, it has been claimed that between 20-40% of venture capital investors earned a 30-40% internal rate of return in Hong Kong during 1990 (Asian Finance, 1990-91) and after the Asian crisis investment returns in South Korea were reputed to be around 20-40% (Seoul Venture Investment Co. Ltd., 1999).

There has been very little research in the area of venture capital processes in the little dragon economies. As for venture capital firm's evaluation criteria within these countries, previous

research suggests marked differences. In Singapore, the entrepreneur's personality and experience was found to be most important evaluation criteria used by venture capital firms while financial considerations were least important (Ray, 1991). Rah et al. (1994) have examined investment evaluation criteria of venture capital firms in South Korea who rank managerial capability, market attractiveness, superior product and technology, financial ability, availability of raw material and superiority of product and technology as most important. The rate of return on investment and market considerations are more important to Taiwanese venture capital firms while product characteristics are considered least important (Pandey and Kim, 1997).

In Taiwan venture capital firms are believed to be proactive and most of the deals are generated by the venture capital firms themselves (Pandey, 1996). In South Korea most of the significant venture capital firms are subsidiaries of financial institutions or larger companies with deal-flow primarily derived from the parent company (Rah et al., 1994). Except for Taiwan, it is unlikely that a venture capital firm will resort to the use of preferred stock as an investment option¹¹. There is more variety in venture capital deals in Taiwan, ranging from preferred stock to more complicated convertible debts and hybrid debt/equity instruments (Chen and Lee, 2000). However, venture capital firms are structured as corporations (AVCJ, 1999) in all little dragon economies, rather than limited partnerships as in the classical venture capital structure¹². Venture capital management firms sometimes themselves have a divisional or multinational structure or they may be a subsidiary of an investment bank or commercial banking firm.

¹¹ In Asia, different classes of stocks with different voting rights are not usually permitted. A survey of 52 venture capital firms in developing countries, 40 of which belonged to Asia, has found that preferred stock constitute only 5% of long term investments in portfolio companies and convertible stock averaged less than 2% (Aylward, 1998). Asian venture capital firms, thus, mostly rely on common stocks and other means of managing risks of the portfolio company.

¹² Although it is acknowledged as an important difference, the term venture capital firm has been used in later discussion to indicate a venture capital firm or a company, for consistency of expression.

Initial public offering is not considered a popular exit in little dragon countries. Venture backed firms typically have to struggle for a long time to be listed on a stock market because of strict pre-conditions. To list a stock on the Hong Kong exchange in reality takes years of profitability, with the expectation that the company will soon be generating USD10-15 million in profits annually (Schilit, 1992). Purchase by a third party or buyback by the company are the most popular modes of exit in Taiwan (Pandey, 1996). With a movement in most of these countries toward a viable alternative stock market (Sender, 2000), there is a possibility that the exit route priorities may undergo some adjustment. The experiment with an OTC (over-the-counter) stock market¹³ has produced mixed results and small market turnover has been a major problem in most markets. However, Taiwanese' R.O.C. OTC (Republic of China Over The Counter Securities Exchange) and South Korea's KOSDAQ (Korea Securities Dealers Automated Quotations), has been relatively successful in terms of trading volume (Gilley, 1999; Business Korea, 2000,a).

The Asian venture capital market was expected to slow down, after the Asian financial crisis in 1997 as it adversely affected equity markets and hopes of initial public offerings (IPOs) of new share issues (Asian Business b, 1998). However, contrary to expectations, the Asian venture capital market registered increasing importance both at the funding and advisory level. In the past venture capital firms functioned mostly as passive investors, however, during the crisis they contributed more of the advice and contacts that companies needed to survive (Asian Business b, 1998). "There is a trend toward greater management involvement and control largely a symptom of the Asia crisis and need for VC's to maximize their returns" ¹⁴. Many of the struggling firms were saved by venture capital. As corporate valuations lowered and currencies depreciated,

¹³ KOSDAQ in South Korea, SESDAQ (Stock Exchange of Singapore Dealing and Automated Quotation system) in Singapore, R.O.C. OTC in Taiwan and GEM (Growth Enterprise Market) in Hong Kong.

¹⁴ Personal Correspondence: Nicholas Ashby, Managing Director, Global Alliance Capital (Malaysia) Sdn. Bhd. Malaysia. April 5, 1999

venture capital investors took minority stakes in unlisted firms in the expectation that they could cash out via initial public offerings within a few years. Companies also welcomed venture capital because, in crises, this capital came cheap compared to loans at prevailing high interest rates. Even listed companies were courting venture capital via private placements (Asian Business b, 1998). Governments seemed to be undeterred by the crisis and the South Korean Government announced on February 11, 1998 that it would set aside USD620 million in 1998 to help finance 2000 venture firms (*The Economist*, 1998).

Some venture capitalists feel that the crisis has left a positive and indelible impression on the Asian market. "... the crisis was the once in a life time opportunities[sic] for venture capital investment as it nosed down deal price and many good ventures were in need of working capital and growth capital which were financed in debt form. In addition, the crises made them change their attitude on debt financing. They became to listen carefully to equity financing [sic]"¹⁵. Others are sceptical. "There is a short term need for capital, but whether the structural and latitudinal changes have taken place to make the market more attractive, is unproven" ¹⁶.

Venture capital in tiger economies is more international in nature and is similar to Europe(OECD, 1997). It is one of the reasons why venture capital as a term is interpreted so loosely in these countries. The current structure and process of venture capital in little dragon countries is the result of many other factors, including individual culture and geography, and the nature of the evolutionary process of the venture capital industry¹⁷. The most noticeable aspect of venture capital in little dragon countries is its comparable infancy. Thus the venture capital

¹⁵ Personal Correspondence: Jung-Kyoo Yang, Chief International Business Deptt, Korea Technology Corporation, South Korea. March 18, 1999.

¹⁶ Personal Correspondence: Jane Crawford, Managing Director, 3I plc South East Asia, Singapore . March 23, 1999

¹⁷ Ivan Zimonyi, manager of the Development Finance Division at the Asian Development Bank quoted in Asian Finance, Six Problems That Need to be Overcome, Anonymous 14(5):56,63., 1988

market in these countries also reflects the initial stages of a fast developing venture capital market. A comparison of stages of financing of venture capital investment over a period in these countries shows that, as is common to new markets, initially venture capital was more focused on seed and start-up financing and has gradually moved away from the initial stages. Most of these markets, probably because of lack of experience (McCurry, 2000), are shy of sophisticated financing (eg LBO) and financing techniques. Akin to the novelty are also the sources of financing. At this stage, corporations and banks are the largest source of venture capital but as the market develops pension funds' share, which are a more common source of venture capital in a developed market like the United States, is increasing. Venture capital investment by industry in little dragon countries is skewed toward industrial goods, energy and the construction business as is expected from growing economies.

Because of the historical ownership structure, the use of venture capital in these countries is not as widespread as in the United States. The closed ownership structure has resulted in the limited use of equity participation incentives to new employees¹⁸. Since this particular aspect of venture capital is particularly important in high technology industries, where human resource is more expensive, it may be the reason why venture capital in these countries is not as high tech as in the United States. Another reason, for limited high-tech emphasis, is the lack of protection available to intellectual property which forms the core of many technology start-ups. Since intellectual property protection is weak in these countries, venture capitalists award lesser status to intangible assets such as patents or copyrights. Thus, portfolio company valuation is based on tangible assets resulting in bank-like financing driven by collaterals. The element of risk however remains unaffected even in case of tangible assets because of less developed accounting practices in these

¹⁸ Family control is not restricted to private companies. For example, in Singapore ethnic Chinese family businesses control 81% of Singapore's listed companies by capitalisation (Chen and Soh, 2000)

countries. As company regulations in these countries are still developing, the environment in these countries is not very accommodating to the use of a wider variety of investment instruments¹⁹. Thus venture capital financing is not structured flexibly enough to suit investors and thus investors have very limited instruments to choose from. In most of the little dragon countries, venture capital firms follow a corporate structure compared to limited partnerships as in the United States. While this structure is more formal and system driven, it takes away the right of the investors to dissolve the fund at the end of stated period. Thus the venture capitalists have less incentive to perform as well to claim back the investment. This factor is likely to make venture capitalists less adventurous in these countries. Although little dragon countries are only now moving toward a secondary stock market, which is viable for disinvestment by venture capitalists, the stock market is not widely used as an exit route. There is, however, very limited information and research as to which alternative mode of exit is more popular.

There is very little research on the value added aspect of venture capitalists in little dragon countries. However, based on factors that have influenced the structure and process of venture capital in little dragon countries, an educated guess can be made. This aspect of venture capital has been discussed in greater detail in Chapter 4.

2.4 Conclusion

Venture capital and its interpretation is not limited to technology, stage of business, value addition, capital gains etc. All over Asia, the term venture capital is construed broadly and the difference between venture capital and private equity, in general, is non-existent. Formal venture capital has a short history in little dragon countries. Venture capital has evolved with respective

¹⁹ Since venture capital financing usually entails successive rounds of financing, involving different investors with different interests, it is often desirable to use a diversity of investment vehicles, whether equity (e.g. various forms of preferred shares), or debt (e.g. notes), or a hybrid nature (e.g. convertible notes), to accommodate the particular requirement of each class of investors.

governments playing a large role in directing and defining the industry. The current industry structure is now a result of a blend of cultures, regulatory environments and developmental needs.

Despite the fact that little dragon countries have different economic structures, their venture capital industries have several common and unique features. The common areas include industry maturity, the corporate structure of venture capital firms, attitude toward entrepreneurial culture, use of stock options and significant involvement of governments in venture capital. The value addition question, taken up in greater detail in this thesis cannot be studied in isolation and should be seen in the light of all the factors that have shaped the current venture capital industry.

In line with the review of venture capital industry in the little dragon countries, the next chapter reviews the existing research which covers the relationship between venture capital firms and portfolio companies.

3 Chapter 3: Literature Review

3.1 Introduction

The question of value added by venture capital firms through their participation in the portfolio companies is explored in this chapter. First, existing research that has been carried out that directly or indirectly relates to the involvement of venture capital firms in their portfolio companies is reviewed. The different research findings, which are specific to the value added debate, are then discussed. The perspective of the value added debate is also explored. The chapter concludes with a summary of the directions of the findings to date.

3.2 Venture Capital Research in the Past

Venture Capital has become common as an innovative means to finance new ventures in the United States (Bygrave et al., 1989) and in other part of the world (Manigart, 1994). Despite this fact, overall research in venture capital has lagged behind the development of the industry (Wright and Robbie, 1997). Barry (1994) enumerates the reasons and argues that the theoretical problems (relating to venture capital) are complex, multi-faceted and difficult to solve. Moreover, its very nature creates difficulties for the empiricist because data on private investment by private investors is difficult to obtain. In general, research on venture capital gained prominence in the late 1960s and early 1970s, as indicated by many publications during this period. This interest, however, subsided to a considerable extent in the following decade. From the late 1980s there has been a renewed research interest in venture capital. An examination of 122 research studies related specifically to venture capital and published after 1984 and before 1998 was carried out. Of these, 40 were published between 1985-1989 and 61 between 1990-1994 suggesting a noticeable rise in research interest. 1995-1997 included 21 studies which, although fewer, indicate a continued interest. The research list, however, is not exhaustive and the results point toward a

general trend. Tybjee and Bruno (1984) have classified the previous research in venture capital beginning with interest in procurement of investment opportunities (deal origination), fund policies (deal screening), evaluation procedures (deal evaluation) and the structuring of the investment agreement (deal structuring). The examination of environments in which venture capital firms operate, can also be added to this list (Cornelius, 1992). Brophy (1986) notes that the role of finance in entrepreneurial-driven-emerging-growth-companies was the main area of research in the 1960s. Attention during the 1970s shifted to the processes of venture capital and its link to modern finance theories (Bancroft and Burgin 1977; Driscoll, 1974). Research in the eighties has focused mainly on the characteristics of the venture capital portfolio, the investment decision process and flows of venture capital (Davis et al., 1984; McMillan et al., 1985; Robinson, 1987; Gatson and Bell, 1988; Wetzel, 1985). During the late eighties there was a gradual increase of interest in the venture capital firm/ portfolio company relationship (Sapienza and Timmons, 1989; Rosenstein et al., 1989; Perry 1988; McMillan et al., 1988) and a growing recognition of venture capital markets outside the United States (Alan, 1989). The first half of the 1990s not only saw several studies focusing attention on various other markets but also testing the applicability of previous research findings in these markets (Ray, 1994; Rah et al., 1994; Ray, 1991). These studies, however, were mostly limited to western countries (Sweeting, 1997; Knight, 1994; Landstrom, 1993; Sapienza et al., 1994; Sapienza et al., 1995).

3.2.1 Research in Venture Capital Involvement

The institutionalisation and recognition of venture capital, as a viable financing alternative, began in the United States. It is, therefore, understandable why most of the research in this area is confined to United States and/or Europe. So far, the research, as regards venture capital firm/portfolio company relations, has covered both the financial and non-financial assistance provided by the venture capital firm to portfolio companies. The subject of involvement of

venture capital firms with their portfolio companies has received more attention during the 1990s. The interest was largely sparked by a suggestion from Timmons and Sapienza (1992) that only those venture capital firms are likely to survive an industry shake out which distinguish themselves through value adding involvement in their portfolio companies. However, the literature discussing the non-financial aspects of the venture capital firm's involvement in the portfolio company has attended more to the extent and focus of the venture capital firm's involvement rather than answering the question of whether the venture capital firms' involvement in their portfolio companies add value to their portfolio companies (MacMillan et al., 1988; Flynn, 1992). The research interest in the field of the venture capital firm's involvement has coincided with the movement of venture capital research beyond the exploratory stage (Bruno, 1986). Consequently, most of the research is based on questionnaires and personal interviews. Another characteristic of research in this area is a comparatively larger focus on high technology companies (Wright and Robbie, 1997). Countries besides the United States have, however, not necessarily shared the technology focus in venture capital research (Murray, 1992; Rizzoni, 1991; Mason and Harrison, 1992).

3.2.2 Is Previous Research in Venture Capital Relevant in an International Context?

Considerable diversity exists between venture capital markets in different countries (Hurry et al., 1992). This difference forces us, at times, to redefine venture capital in many individual situations. Questions about the inclusion of very large management buyouts/buy-ins and later stage investments within the sphere of venture capital, as in the United Kingdom (Murray, 1995), are still being debated (Bygrave and Timmons, 1992; NVCA, 2000). Thus, for researchers contemplating investigation of less explored markets, grappling with the definition of venture capital is one of the more searching questions that must be answered satisfactorily. Designing a research question is made more difficult by the fact that respective environments influence

elementary research parameters. Thus, the term value added may be interpreted differently. While, it is expected that the difference in interpretation may result in a new perspective that is not comparable with the existing body of literature, the existing literature cannot be termed irrelevant. Internationalisation of venture capital and past efforts toward replication of the United States model in many Asian countries point towards a possible broad convergence on many features of venture capital. Many inferences, thus, may turn out to be transportable across countries. The existing literature, in any case, serves as a useful starting point for venture capital research.

3.3 Venture Capital Firm/Portfolio Company Relationship Dynamics

In the classical²⁰ sense venture capital firms are organised as limited liability partnerships and seek to finance new or developing high growth firms which do not have access to the public securities market or institutional lenders (Morris, 1991). A venture capital firm acts as a financial intermediary receiving funds from subscribers and investing on their behalf in portfolio companies, invariably, in the shape of equity or long-term debt which may be convertible into equity at a later stage (Robbie & Wright, 1996). Venture capital firms, consequently, can be theorised as a professional service not dissimilar to commercial banking, investment banking or even insurance (Swartz, 1991). Venture capital firms usually invest in groups, commonly termed 'syndicates', with one of the firms acting as 'lead'. The syndicate structure of a venture capital market holds several advantages for venture capital firms (Lerner, 1994)²¹. The post investment relationship between a venture capital firm and a portfolio company typically lasts from 3 to 10 years (Sapienza and Amason, 1993). A venture capital firm offers more than finance (Roberts a,

²⁰ The venture capital market model as developed in the United States.

²¹ Syndication may lead to a superior selection of investments. Syndication also gives venture capitalists a chance to check out their own thinking against other knowledgeable sources. Syndicating first-round venture investments may lead to better decisions about whether to invest in firms. Syndication is also a mechanism through which venture capitalists exploit informational asymmetries.

1991; Fried and Hisrich, 1995) by actively monitoring the project and participating, within limitations, in decision-making processes. They may, sometimes, assume a managerial role within the portfolio company. To some researchers, this appears to be one of the most significant distinguishing features that sets the Venture capital firm apart from other capital providers (Rock, 1991; Perry, 1988). Venture capital has been characterised as the combination of capital and consulting (Warne, 1988).

The post investment involvement of a venture capital firm and its portfolio company is unlikely to follow a set pattern. Basically, the complexity grows out of the three dimensions of the venture capital firm/portfolio company relationship. First, portfolio companies do differ according to size, industry, technology etc. Secondly, relationship parameters, like the relative amount and share of equity and the lead status role of venture capital firms, may influence relationship patterns. Thirdly, venture capital firms also differ. For a while, a misconception about the homogeneity of the venture capital business clouded this third dimension of the relationship. However, it was later found that even within the United States the venture capital industry is not homogenous, as believed in the past (Fried and Hisrich, 1988). In fact researchers started examining the differences (Robinson, 1987; Florida and Kenny, 1988; Sapienza and Timmons, 1989) among venture capital firms long before venture capital became recognised as a heterogeneous industry (Bygrave and Timmons, 1992). Because of the networking of co-investors the relationship between a venture capital firm and a portfolio company was not believed to be dyadic (Stier and Greenwood, 1995). However, the concentration of research studies focusing exclusively on the relationship between the lead investor and the portfolio company (Rosenstein et al., 1989; Pandey and Jang, 1996; Sapienza and Gupta, 1994; Sapienza, 1992) is indicative of a one to one relationship.

The relationship between the venture capitalist and the entrepreneur is governed by several structural governance mechanisms (Fried and Hisrich, 1995; Rosenstien, 1988; Reid et al., 1997; Barney et al., 1989; Gladstone, 1989; Barney et al., 1994). One of the monitoring mechanisms is to adjust contact frequency. Gompers (1995) has shown that a decrease in industry ratios of tangible assets to total assets, higher market to book ratios and greater R&D concentration results in more active monitoring of the portfolio company. Compensation schemes are put in place to offer the entrepreneur appropriate incentives. Convertible securities are used which give Venture capital firms an option to sell their stake back to the entrepreneur. Covenants are also used to manage risk (Cornelius, 1992) and to limit entrepreneurial behaviour detrimental to value maximisation efforts of venture capital firms (Gompers and Lerner, 1996). Although Gompers (1995) has downplayed the role of accounting information and reports submitted by the portfolio companies to their Venture capital firms for facilitating governance, some researchers (Robbie et al., 1992; Sweeting, 1991) have specifically addressed the subject as very important.

3.3.1 The Extent of Influence and Governance

Whether and how venture capital firms can influence a portfolio company's decisions, considering their "arm's length" (MacMillan et al., 1988) position, has attracted very little attention. The argument to explain influence (Gomez-Meija et al., 1990) is based on resource-dependence theory (Yutchman and Seashore, 1967) as Stiglitz and Weiss (1982) have applied it to the banking industry. As influence is the process of exercising power, the amount of power that A exercises on B depends on the degree to which B depends on A for things B needs. Portfolio companies are primarily dependent on venture capital firms for capital (Frederiksen et al., 1990). The uncertainty in portfolio companies' circumstances also increases the dependence of portfolio companies on the venture capital firms. The dependency, and hence potential for influence, is also increased in that there are not many alternative sources of financing for high tech firms

(Rosenstien et al., 1993). The primary reason for the lack of alternative financing is because the value of portfolio companies lies in their potential growth rather than their tangible assets (Jeng and Wells, 2000). A venture capital firm's influence is multiplied further if it is able to add important resources to the resource pool of a portfolio company. This argument stems from the findings of Salancik and Pfeffer (1974) who have indicated that the power of a department in an organisation is a function of the number and extent of important resources contributed by the department. Thus venture capital firms are in a position to exercise, whether they choose to or not, enormous real and potential power over the portfolio company. Although, venture capital firms are not the only equity investors to be involved in investees (Adamati et al., 1994; Gatson and Bell, 1988), the fact that venture capital firms do exercise a greater control over portfolio companies is supported by the studies which have found that venture capital firms have been known to perform some key corporate functions (Sahlman, 1990) and even take complete control of the portfolio company dismissing the original entrepreneur (Chan et al., 1990). Although it cannot be said with certainty whether the influence of venture capital firms on portfolio companies has undergone a change, evidence shows that the power that financial institutions exercised over corporations has declined (Herman, 1981).

Before going through past research, which focuses on the extent of involvement of the venture capital firm in its portfolio company, it needs to be mentioned that there are differences among researchers regarding the use of a common scale to measure involvement. The criteria most researchers have used is the amount of time spent by the venture capital firm with their portfolio companies (Gorman and Sahlman, 1989), the number of activities that a venture capital firm is involved in (Rosenstein et al., 1989; Pandey and Jang, 1996; MacMillan et al., 1988) or the frequency of venture capital firm/portfolio company interaction (Sapienza and Gupta, 1994; Sapienza, 1992).

A venture capital firm's involvement with a portfolio company is usually at a senior level (Macmillan et al., 1988) and the senior partners may spend as much as 60% of their time in post investment activity (Gorman and Sahlman, 1986). Venture capital firms differ in the amount of time they spend with their portfolio companies (Robinson, 1987; Gorman and Sahlman, 1986). Lead venture capital firms are generally more involved with their portfolio companies than the non-lead firms (Gorman and Sahlman, 1986; Elango et al., 1995). A comparison of research conducted by Gorman and Sahlman (1986) and Elango et al. (1995) indicates the different amounts of time venture capitalists spend with their portfolio companies. The earlier study shows markedly less time allocation compared to the later study. This may suggest that venture capital firms' involvement in their portfolio companies is increasing. The difference is probably understated as the first study concentrates on early stage ventures where the involvement is thought to be higher (Sapienza, 1992). MacMillan et al. (1988) have classified the involvement of venture capital firms in their portfolio companies as low (*laissez-faire*), moderate and high (close tracker). This classification is generally accepted and often quoted in research studies relating to the involvement of venture capital firms.

Macmillan et al. (1988) have also concluded that venture capital firms are more involved with their portfolio companies simply because they chose to be involved. Barry (1994) has refined this conclusion by citing evidence that the choice of involvement is in turn dependent on the need to be involved as perceived by the venture capital firm. Sadtler (1993), however, has argued that although involvement may be a matter of choice, in some comparable cases, the difference in involvement is dependent on contingent factors (Sweeting, 1991), some of which, may not be under the control of the venture capital firm. There have been a number of research studies that have found adequate evidence that these "contingent factors" do influence the involvement of a venture capital firm (Sapienza et al., 1996; Sapienza and Timmons, 1989; Barney et al., 1996).

3.3.1.1 Contributing Factors Determining the Extent of Venture Capital Firm's Involvement

Based on the above two point of views, the research on factors influencing involvement can broadly be divided into two parts. Firstly, a venture capital firm's involvement is dependent on their perceived role, which is, primarily, managing the risks of the proposed venture (Macmillan et al., 1985; Ruhunka and Young, 1991; Driscoll, 1974). Secondly, it is also dependent on a number of other factors over which venture capital firms have little control.

3.3.1.1.1 Managing Risk

The argument that venture capital firms may exercise greater influence on a portfolio company when there is a perception of higher risks is based on Galbraith's (1973) information processing theory. The theory concludes that the complexity of a decision making process is dependent on "task uncertainty". Task uncertainty, in this case, is the gap between the information necessary to make effective decisions and the information already possessed by the decision-makers. This suggests that the venture capital firm will seek greater control, and hence more information from the portfolio company in the case of higher risk, as perceived by the venture capital firm, resulting in greater interaction. Sapienza et al. (1994) have found general evidence in support of the argument and state that there is less involvement of venture capital firms in monitoring activities in the portfolio companies with comparatively lesser risk. It needs to be mentioned that, though a venture capital firms' involvement may be an attempt to reduce risk, greater involvement is not always cost effective and needs to be balanced against the benefits obtained (Barney et al., 1989; MacMillan et al., 1988). The existing literature on venture capital, in regard to risks faced by a venture capital firm vis-à-vis a portfolio company, has looked at this problem from two basic viewpoints. One group of researchers simply considers these as parts of business risks while others see these risks as essentially emanating from agency relations, believed

to exist, between a venture capital firm and a portfolio company. There is, however, considerable overlap, from both points of view, in regard to factors that are understood to affect a venture capital firm's involvement with its portfolio company.

3.3.1.1.2 Business Risk

Business risk, faced by venture capital firms, has been defined as the uncertainty associated with obtaining a return on investment in a new firm due to that firm's competitive environment (Barney et al., 1989). The business risks, in regard to venture capital, have been broadly conceptualised in terms of venture performance, the technology being pursued by the venture and venture stage (Sapienza et al., 1995). There is sufficient consensus that venture performance and technology has a direct relation with the venture capital firm's involvement (Sadler, 1993). Research conducted in the United Kingdom has gone as far as to confirm that, irrespective of the initial strategy preference, heightened intrusion by a venture capital firm resulted when the investee company was in particularly difficult circumstances (Murray, 1991). The relations between venture stage and involvement has remained a subject of debate. The research findings in this case can simply be classified into studies which did not find any correlation between the stage of the portfolio company and the heightened venture capital firms' involvement (MacMillan et al., 1988; Elango et al., 1995), and studies which found otherwise (Gorman and Sahlman, 1986).

3.3.1.1.3 Agency Risk

The literature on agency risk in venture capital considers the relationship between a venture capital firm and a portfolio company from a principal/agent viewpoint (Reid, 1996; Fiet, 1995; Chan et al., 1990). An agency relation is one where a "principal" i.e. a venture capital firm delegates its authority to an "agent", a portfolio company, to perform some service for the principal. This point of view has its basis in the division that exists between management and

ownership, as in the case of corporations (Coase, 1937; Hoffman, 1982; Howe and Patterson, 1985). Agency theory is acknowledged "by its emphasis on the risk attitudes of principals and agents" (Barney & Hesterly, 1996: 124).

Agency risks, as faced by a venture capital firm, are primarily classified into moral hazard risk and adverse selection risk. Moral hazard is a risk where the entrepreneur may not put forth the efforts originally agreed upon. The risk of adverse selection pertains to the possibility of an entrepreneur misrepresenting his/her abilities. The basic premise holds that the frequency of a venture capital firm/portfolio company interaction will be greater when high agency risks necessitate greater monitoring by the venture capital firm (Fama and Jensen, 1983; Barney et al., 1989; Reid, 1987). As applied to venture capital firm/portfolio company relations, there exist multiple sources of agency risks (Callahan and Sharp, 1985). So far, the variables that effect governance, derived from agency theory and found positively related to involvement, include venture capitalist/chief executive officer goal congruence, stage of the business, degree of technical innovation and physical distance between the venture capital firm and the portfolio company (Sapienza and Gupta, 1994). The involvement has been found to be negatively related to the experience of the chief executive of the portfolio company and the extent of the venture capitalists'/entrepreneur's personal relationship (Barney et al., 1989; Gomez-Mejia et al., 1990, Sapienza and Gupta, 1994). The agency risk factors of the venture capital firm/portfolio company experience and the length of the venture capital firm's association with the portfolio company has produced mixed results at an international level (Sapienza et al., 1995; Sapienza et al., 1996). There is disagreement on the application of agency theory to venture capital firm/portfolio company relations (Cable and Shane, 1997). The empirical research on venture capital suggests that there may not always exist a hierarchical relationship between a venture capital firm and a portfolio company. Moreover, there is room for opportunistic behaviour on the part of a principal (venture capital firm) making

desertion a possibility (Sahlman, 1990), which challenges one of the basic premises of agency theory. Furthermore, the portfolio company's performance, to some extent, also depends on the competence of the venture capitalist.

3.3.1.1.4 Contingent Factors

The venture capital firms' own circumstances, which are beyond their control, are also likely to effect the extent of involvement. The venture capital industry has become increasingly specialised (Robinson, 1987; Swartz, 1991; Gorman and Sahlman, 1986). Research studies have identified technology being pursued (Tybjee and Bruno, 1984; Sadtler, 1993) and the investment stage of the portfolio company (Gorman and Sahlman, 1986; Robinson, 1987) as possible areas in which venture capital firms may specialise. Thus, venture capital firms specialising in particular stages or technologies, may be forced to get more involved in their portfolio companies because of high risk factors. Similarly, the size of the venture capital firm in terms of capital under management (Elango et al., 1995) and the experience of the venture capitalists (Sapienza et al., 1996) may reflect on the venture capital firm's decision to be more involved with the portfolio company. Moreover, geographic proximity of the venture capital firm with the portfolio company may also effect the extent of involvement as venture capital firms located close to their portfolio companies tend to be more involved in their portfolio companies (Gomez-Meija et al., 1990). The research conducted by Wright et al. (1994), though restricted to management buyouts, found that larger deals attracted repeated and active monitoring by venture capital firms in the United Kingdom. Cultures differ across countries and so does the concept of venture capital. These differences ultimately influence methods of doing venture capital business (Clark, 1987). These differences are also reflected in the extent and frequency of a venture capital firm's/portfolio company's interaction (Sapienza et al., 1994; Jog et al., 1991).

3.3.2 The Choice Of Platforms

The most common (Robert, 1983) and influential (Landström, 1990) method of venture capital firms' involvement in their portfolio companies is through participation on the Board of Directors. Although any contribution or initiative to contribute by the venture capital firm may not be the result of, or by virtue of, their seat on the Board, there is a direct relationship between the increased role of the venture capital firm on the Board and management's favourable assessment of the resources (finance, experience, expertise, technical assistance etc) provided by the venture capital firm (Landström, 1990). The existing literature, while discussing a venture capital firm's contribution, rarely distinguishes the involvement of the venture capital firm through different platforms. Nevertheless, it is generally agreed that the greatest involvement of a venture capital firm in its portfolio company is through representation on the Board (MacMillan et al., 1989). Even in those cases where venture capital firms do have membership on the board, they may also be involved through formal/informal meetings (Gomez-Meija, 1990). The venture capital firm may also take advantage of making unexpected telephone calls to CEO's in an effort to update themselves as to the status of the business and provide an opportunity for the CEO to discuss important issues (Fiet, 1995).

Research studies on board representation of venture capital firms in portfolio companies have analysed the actual representation decision, its size and the influence board members carry within the board of directors. A venture capitalists' desire to be represented on the board of a portfolio company may depend on its choice (AVCJ, 1999) or the presence of various other factors. Local regulations may prevent a venture capital firm from claiming a seat on the board. In Japan, for example, it is unusual for a venture capital firm's representative to be on the board of a portfolio company due to antitrust laws (Spencer, 1995). Furthermore, in cases of syndicate financing, representation of non-lead managers on the board of a portfolio company is also uncommon

(Rosenstein, 1990). The size of a venture capital firm's investment may have some bearing on their representation (Elango et al., 1995). The number of board members that will represent a venture capital firm will also depend on circumstances. It has been determined that a portfolio company with proximity to a venture capital firm is likely to have more venture capital board member involvement/representation than others (Lerner, 1995). Lerner (1995) has also concluded that there is heightened involvement of venture capital firms on the board in times of crises, and the number of board members representing a venture capital firm increases between financing rounds when the firm's CEO is replaced in the interval. Venture capitalists' number and influence on the Board also tends to be determined by the diversity of ownership in a portfolio company. The company with a comparatively wider ownership (mainly public limited companies), tend to be influenced more by the CEO in regard to the selection of the board of directors (Rosenstien, 1990). It has also been established that, generally, the Board of a high-tech portfolio company is dominated by venture capital firms (Rosenstein et al., 1993).

In regard to the direct interaction between a venture capitalist and an entrepreneur, one of the limiting factors for a venture capitalist is the paucity of time. The decision to interact is also influenced by the apprehension that excessive intrusion in the portfolio company may cause resentment on the part of the portfolio company and/or encourage complacency where the chief executive of the portfolio company will not take risks thereby jeopardising the entrepreneurial spirit of the project. It has also been argued that as a result of greater contact, the chief executive of the portfolio company may cease feeling inhibited about taking a decision contrary to the wishes and interest of the venture capital firm. The risk is greater when he/she has a greater predilection to serve self-satisfying goals (Barney et al., 1989). The last argument appears tenable because the chief executive of the portfolio company has also much at stake in the shape of his/her equity investment, which ranks him/her almost equal to the venture capital firm in terms

of expectations from the venture. Thus, the chances of adverse selection or bad judgement may be greater than those of moral hazard or self-satisfying motives. It needs to be emphasised, however, that the incentive for the venture capital firm to be in contact with the chief executive of the portfolio company will always remain (Sapienza and Gupta (1994), because expecting 'perfection' from the management team of the portfolio company, in all circumstances, is impossible. Moreover, managerial competence in the portfolio company is usually the greatest concern of the venture capital firm (Ruhunka and Young, 1987).

An alternative way of looking at the issue of venture capital governance is suggested here in Table 3.1. In order to understand the value-added role of investors, like venture capital firms, there is a need to make a distinction between value-added investors and others. Governance is a broad term and covers the activities of all types of investors. It should be separated into elements which will draw attention to the role of an investor vis-a-vis his/her investment. The division of governance into three modes each, with their own unique features, is useful. The basic objective of "monitoring" is to seek information from an investee company and to analyse this information in order to determine the extent of risk. Monitoring indicates to the venture capital firm when to make adjustments in other governance modes. Information about an investee company is gathered from multiple platforms ranging from telephone conversations with the management of the investee company to on-site physical inspection. Moreover, there are several external sources, which help determine the extent of risk in a broader industry scenario. The scope and amount of information flow can be adjusted by increasing/decreasing the number, frequency and time allocation of the relevant platform.

3.1 Classification of Governance Modes

	Governance Modes		
	Monitoring	Controlling	Involvement
Objective	Seek Information	Establish standards and provide incentives	Add value
Risk Management	Analyse and Assess	Control	Minimise
Platforms	Internal <ul style="list-style-type: none"> • Telephone • Formal/informal Meetings • Board Participation • Reports • Physical Inspection External <ul style="list-style-type: none"> • Competitors • Industry data • Journals/ Newspapers etc 	<ul style="list-style-type: none"> • Compensation schemes • Convertible securities • Covenants 	<ul style="list-style-type: none"> • Telephone • Formal/Informal Meetings • Board Participation
Adjustment Mechanism	<ul style="list-style-type: none"> • Frequency • Number • Time spent 	<ul style="list-style-type: none"> • Extent • Size/ number • Scope 	<ul style="list-style-type: none"> • Frequency of Interaction • Participation in Number of Activities • Time spent
Stage	Mostly post-Investment	Mostly pre-investment	Post-Investment
Approach	Hands-off	Passive	Pro-active

Controlling indicates a different governance mode. One of the objectives of controlling is to set standards of performance and behaviour for the management of the portfolio company. Another objective is to develop adequate and appropriate incentives for the portfolio company management in order to achieve the desired level of performance. This exercise ensures that the risks already identified are prevented from increasing any further. This goal is primarily achieved through the use of convertible debts and ratchet (staged) financing (Gompers, 1997). Potential moral hazards are also controlled through various covenants contained in the financing agreement (Barney et al., 1994; Chan et al., 1990). Control is also established through innovative

compensation schemes employed to offer appropriate incentives (Sahlman, 1994). Major changes in these variables are less likely to occur after the investment has been made. Thus, these controls are passive by nature.

The purpose of what is classified as “involvement” is to add value by increasing the chances of survival of the portfolio company and hence minimising risk. This is primarily achieved through actual participation in the portfolio company’s business activities. This classification underscores the point that while other suppliers of funds, like banks, only monitor and control their investments from relevant platforms, what makes a venture capitalist special is his involvement with the investee, where the value-added objective assumes more prominence. It is argued further that the involvement issue is akin to the value-added question. It, however, needs to be emphasised that while some governance platforms are easily identified with a governance mode, it is difficult to draw a line between others. For example, a telephone conversation may start with the venture capitalist seeking information from the entrepreneur i.e. monitoring, and may end with the venture capitalist conveying useful information/advice i.e. involvement.

3.3.3 Areas And Focus Of The Venture Capital Firm’s Involvement In The Portfolio Company

The last half of the 1980s saw efforts on the part of researchers to identify (Timmons and Bygrave, 1986; MacMillan et al., 1989; Gorman and Sahlman, 1989) and rank (Perry, 1988; Sapienza and Timmons, 1989; Landstrom, 1990) the activities (in order of importance and the extent of involvement) in which venture capital firms were involved with their portfolio companies. MacMillan et al. (1989) identified as many as 20 activities in their study, including;

- 1) assistance in finding and selecting key management team personnel;
- 2) solicitation of essential suppliers and customers;

- 3) strategic planning;
- 4) assistance in obtaining additional financing;
- 5) operational planning ; and
- 6) replacement of management personnel when appropriate.

Gorman and Sahlman (1989) added the provision of network of contacts to this list. This activity is now identified as one of the more important areas of contribution (Littler and Sweeting, 1989; Jarillo, 1989).

Although researchers differ slightly (Rosenstein, 1988; Rosenstein et al., 1990; MacMillan et al., 1989; Ehrlich et al., 1994), an indicative study by Rosenstein et al. (1989) regarding the focus of a venture capital firm's involvement found that the chief executive of the portfolio company regarded the five most important areas of the venture capital firms' involvement according to ranking as;

- 1) a sounding board to the management team;
- 2) interfacing with the investor group;
- 3) monitoring the operations;
- 4) monitoring financial performance; and
- 5) recruitment/replacement of the chief executive of the portfolio company.

The evidence that captive²² venture capital firms tend to have more financial expertise whereas independent venture capital firms have more industrial expertise and hence greater involvement (Beecroft, 1994) suggests that the focus of the venture capital firm's involvement depends on the skills and expertise available to the venture capital firm. Moreover, the emphasis or importance of any activity has been found to be dependent on the stage at which the venture capital firm discovers its investment (Sapienza and Timmons, 1989; Fried and Hisrich, 1994; Rosenstein, 1993). Venture capitalists have been "characterised" as coach, mentor and adviser based on their particular activities (Sapienza and Timmons, 1989; Landstrom, 1990) but this approach tends to generalise the relationship, which depends on multiple factors. The factor dependent characterisation (Lorenz, 1989; Olofsson, 1985) approach is comparatively recent and appears to be more useful than simple characterisation of the venture capitalist's role.

3.4 The Value Added Question

Managerial support activities on the part of equity investors can help to add value to the firm (Thurrow, 1992; Klien, 1987). Even discounting the actual contribution, one of the objectives of the venture capital firm through involvement with the portfolio company is an attempt to add value (Bhide, 1994). Amit et al. (1998) have argued that venture capital firms will generally operate in an environment where their relative efficiency in selecting, monitoring and adding value to the investment gives them a comparative advantage. The attempt to add value, in fact, is difficult to segregate from the venture capital firm's efforts to protect the investment and is considered part of the venture capital process (Silver, 1985; Sadtler, 1993). The question of value added, however, has been a tricky one for research scholars. The basic problem emerges from the fact that it is very difficult to assess the impact of particular decisions on the value of the company. Any attempt at determination of value-added would lean toward subjectivity and

²² A venture capital firm fully or partially owned by another business.

generalisation. It is, thus, not surprising that most of the studies are built around the perception of the venture capitalist and/or the entrepreneur as regards addition of value. Moreover, while venture capital firms, are involved in a number of activities, their actual value added contribution may not be in all areas of activity. Furthermore, the venture capital firm and its portfolio company differ in composition, expertise, culture and a host of other factors. These differences reflect on the capacity of venture capital firms to add value and the appetite of a portfolio company to absorb added value. Technology oriented firms, for example, are considered particularly receptive to value addition by equity investors because of their capability to absorb inputs (Forest, 1990; Landstrom, 1990). In some cases the value added question may not arise altogether because venture capital firms, for whatever reasons, may not be involved in their portfolio companies. Research has shown that international differences do influence involvement and may also prevent generalisation of findings (Sapienza et al., 1996). The argument over addition of value by venture capital firms in their portfolio companies has been debated for a number of years. The researchers, in regard to the value addition question, have taken two general approaches. One set of studies considers the perception of venture capitalists/ chief executives of the portfolio company and the other looks at the perception of venture capital firms in regard to value added.

3.4.1 The Rationale

Researchers have put forward several arguments to substantiate the existence of circumstances in a venture capital/portfolio company relationship, which should result in value addition. One of the arguments stems from the basic premise that organisations use information to reduce uncertainty and curtail ambiguities (Daft and Lengel, 1986). This approach requires subjective judgement and intuition (Daft and Lengel; Simon, 1987). Proper understanding of the problems, therefore, is more important than information to better control ambiguities. When a venture

capital firm and a portfolio company interact with each other value is added when better understanding develops and creative solutions to problems are found (Bourgeois and Eisenhardt, 1988). Another argument in this context is based on the organisational learning model, which assumes that learning improves performance (Argyris, 1994; Mezias and Glynn, 1993). Besides any financial or non-financial assistance, portfolio companies get added value through learning from venture capital firms (Fiol and Lyles, 1985; Rock, 1991; Sapienza, 1992). “As venture capitalists have observed various cases of business matters in other portfolio companies, they are in a good position to give advice”²³. The very process of asking questions and engaging in due diligence operations sharpens the thinking of the company management and inspires them to think through their growth plans and potential problem areas in a more targeted manner (Sadler, 1993).

Since there is a need for small firms to focus on their strategic objectives (Roberts, 1991), a venture capital firm can add value through regular checks forcing CEOs to follow dominant logic, focus on it, and limit the number of objectives (Prahalad and Bettis, 1986). The contractual arrangements said to be designed to control opportunism (Barney et al., 1994) by the CEO, prevents management from non value maximising activities, links compensation with performance, offers incentives to keep good managers (Wright and Robbie, 1997) and is really geared toward value maximisation (Sahlman, 1990). Staged investments also enable a venture capital firm to terminate involvement and cut back losses (Gompers, 1995) hence maximising value. A further rationale of possible value added has been forwarded by Carvalho (1996), which is based on his finding that more than $\frac{3}{4}$ of venture capital firms operate in an informal network and a majority of venture capital firms reported acting on the suggestions of other venture capital

²³ Personal correspondence record: Comments by Jung-Kyoo Yang, Chief, International Business Department, Korea Technology Corporation, South Korea

firms in as important a matter as hiring a new manager. Based on this, Carvalho (1996) argued, that through the mechanism of networking, a venture capital firm adds value by transferring organisational capital to firms. He includes organisation culture, experience and knowledge in organisation capital.

Reputed venture capital firms, by backing a start-up, add a seal of approval to a portfolio company (Fried and Hisrich, 1994). This can translate into an increased availability of a whole gamut of resources for the portfolio company at comparatively better terms compared to those businesses, not backed by venture capital firms. Supporting institutions like lawyers, accounting firms, auditors and lessors are known to gather around an “approved” portfolio company in the hope of reaping benefits at a later stage (Magginson and Weiss, 1991; The Economist, 1997 (a); Jarillo, 1989).

3.4.2 Venture Capital Firm/Entrepreneur’s Perception

Venture capital firms expect that their involvement in the portfolio company will increase the likelihood of the success of the venture (Rock, 1991; Perry, 1988) and may even be welcomed by the portfolio company (Fried and Hisrich, 1994; Bygrave and Timmons, 1992; Silver, 1985). The previous research studies as far as the methodology is concerned, have been predominantly based on survey instruments, case studies or interview data from venture capital firms about specific companies (Gorman and Sahlman, 1986; MacMillan et al., 1988; Rosenstein, 1988). Using similar methodology, researchers have also collected data from entrepreneurs about the involvement of respective venture capital firms in different activities (Fried and Hisrich, 1994; Rosenstein et al., 1993; Rosenstein et al., 1989, Rosenstein et al., 1990). Lastly, by pairing the venture capital firm/portfolio company as unit of analysis, data has been collected from both participants to evaluate the relationship (Sapienza and Timmons, 1989; Sapienza, 1992; Sapienza et al., 1996).

Some of the studies have restricted themselves to high technology portfolio companies (Barney et al., 1996; Ehrlich et al., 1994; Sapienza and Amason, 1993; Stier and Greenwood, 1995).

The research results, overall, are conflicting (Cherin and Hergert, 1988; Sapienza, 1992). No relation has been found between intensity of involvement, perception of value addition and venture performance (Rosenstien et al., 1989; MacMillan et al., 1988). The CEOs of the portfolio companies do not see venture capitalists on the board as adding more value than any other board member (Rosenstein et al., 1989) unless the venture capital firm is highly reputed (Rosenstien et al., 1993). Rosenstien et al. (1993) also found that the perception of value added is greater where higher activity is reported. According to them, monitoring of operating and financial performance and formulation of marketing plans have been identified by CEO's as areas in which venture capital firms apply great effort but do not produce as much value added as expected. Based on these findings they concluded that the value added depended on the type of activity undertaken.

Studies in the United Kingdom (Harrison and Mason, 1992) and the Netherlands (VanWakeren et al., 1989) have found that entrepreneurs in the United Kingdom rate acting as a sounding board and advising on strategic matters as the most important value adding activity of venture capitalists. They depend more on the assistance of venture capital firms than they do on other types of investors. Gomez et al.(1990) found through personal interviews that CEO's of portfolio companies recognise the financial and networking contribution of venture capital firms as a positive value adding activity. They also found that managerial involvement by the venture capital firm was perceived negatively by the CEOs'. These results may explain Flynn's (1992) findings that venture capital firms have a low involvement in the administrative aspects of the new ventures. Murray (1994) has narrowed down finance as the only area where the portfolio

company considers the skills of the venture capital firm better than that provided by other investors. In contrast a British Venture Capital Association Survey (1992) has found that portfolio companies' perception toward welcoming post investment involvement undergo a change, and they start preferring active non-financial assistance.

The value added contribution was initially found, by Sapienza and Timmons (1989), to vary according to the stage of maturity of the portfolio company, experience of the CEO and the amount of equity stake of the venture capital firm in the portfolio company. Sapienza, however, in his later study (1992) of 51 matched pairs of venture capital firms/CEO's discounted stage as a factor. Instead, he found that a higher level of innovation being pursued, compared to a competitor, was positively related to value added. This means that a portfolio company pursuing more intricate technology is more likely to experience a greater involvement of the venture capital firm²⁴. A second finding from the Sapienza (1992) study was that greater and/or open interaction between venture capitalists/CEO resulted in a higher perception of value-added. This is basically a personal compatibility between CEO of the portfolio company and the venture capitalist. He also found the perception of value added to be related to venture performance.

3.4.3 Portfolio Company Performance

The research studies relating to the performance of the portfolio company can be divided into pre-IPO and post IPO analysis of the performance. Although pre-IPO value added perception has been found to be both directly correlated (Sapienza, 1992) and unrelated (Rosenstein et al., 1989) to venture performance, the post-IPO success rate of venture capital-backed ventures was found to be significantly higher than the success rate of new ventures generally (Nash, 1988; Davis and Stetson, 1984; Maier and Walker, 1987). These findings are debatable because a better

²⁴ Perry (1988) and Timmons and Bygrave (1986) have pointed out the technology aspect of the relationship in earlier studies.

success rate of venture backed firms may largely be the result of other factors including the all important fact that the selection of the venture is a very rigorous exercise with discreet success criteria (Bruno and Tybjee, 1985; Tybjee and Bruno, 1984; Marrifield, 1987; Hall and Hofer, 1993; Rah et al., 1994; Knight, 1994). Thus, only those ventures are cleared for funding which stand a better chance of survival (Chan, 1983). However, balancing this advantage is the fact that venture capital firms end up financing ventures that cannot tap conventional sources of financing because of the risks involved²⁵. Thus, the performance of venture-capital-backed ventures, even when it is at par with non-venture-capital backed ventures, means added value. Other possible factors believed to result in value added, by effecting post-IPO performance, include the incentive to exit (Berglöf, 1994), the proper syndication of investment (Adamati and Pfleiderer, 1994) and the staging of investment (Bergmann and Hege, 1997). Barney et al. (1996) have concluded that venture capital backing does improve the performance of the portfolio companies but only marginally.

The increased presence of a venture capitalist on the board, as evidenced by their numbers, has not been found to have any association with the performance of the venture (Rosenstien, 1993). It is generally acknowledged that there is a need for more research to investigate the relation between venture capital finance and the success of a venture (Brophy, 1986; Bygrave, 1987; Timmons, Fast and Bygrave, 1983; Tybjee and Bruno, 1984).

Based on post-IPO performance analysis, the notion of value added was earlier rejected by Cherin and Hergert (1988) when they did not find any statistical difference between the risk-adjusted returns of venture backed and non-venture backed companies, after the initial public offering, over a period of two years. Sapienza and Timmons (1989) have expressed reservations

²⁵ Winner's curse.

about the methodology used in this study through an analogy with two students studying at Harvard who come from different schools. They argue that, in this case, differences in grades at Harvard may not be a reflection of the quality of training provided by the respective schools. Cherin and Hergert (1988) have themselves admitted that any value added may have already been discounted through the initial price. Sapienza and Timmons (1989) have also questioned the adequacy of a two-year period to allow for the surfacing of differences between venture-capital-backed and non-venture-capital-backed ventures. Following on the premise that value added is discounted through price at IPO stage, Brophy and Verga (1988) postulated that the companies backed by venture capital should be less under-priced from the beginning and early returns should vary less than firms which are not in receipt of venture capital. They found that venture capital backed companies outperformed others over 20 days after the initial public offering. They also found that unlike non-venture backed companies, venture capital backed ventures do not gain substantially from having a prestigious underwriter. However, Gompers and Lerner (1999) have pointed out that underwriters may play a role in reducing asymmetric information thereby reducing chances of a negative price reaction for an IPO.

Stein and Bygrave (1990) hypothesised that venture capital firms with more seats on the Board of a company add more value and thus the related portfolio companies should perform better post IPO. They did find higher returns for these companies over a period of four years after IPO. Apparently, Cherin and Hergert (1988) have not only conducted their study over a shorter period but also ignored the extent of the post-IPO association between the venture capital firm and the portfolio company. Bharat & Omesh (1995) in a relatively recent study with more parameters of operating performance have found that the market appears to recognise the value of venture capital firm monitoring which is reflected in the higher levels of market to book ratios and P/E ratios at the time of an initial public offering. Going further, they have also found that venture

capital backed IPO firms have superior operating performance compared to non-venture backed IPO firms over a three-year post issue period. Besides this, there is considerable evidence that companies who go private through LBO/MBO experience considerable improvement in performance (Kaplan, 1989; Muscarella and Vetsuypens, 1990; Smith, 1990).

3.5 Conclusion

The surge in interest in venture capital throughout the world owes more to formal institutionalisation of this market rather than the novelty of this concept. Since the United States has always been on the forefront of this institutionalisation, it is not surprising that most of the development and research relating to this market has originated from the United States. As the formal recognition of this concept has crossed international boundaries so has the research interest. However, academics have had a hard time keeping pace with the speed at which the world has formally embraced this idea. Researchers have covered different aspects of this market as it has progressed and the 1990s has seen a growing interest in the value added role of the venture capital firm. The 1990s also saw a number of in-depth research studies of the venture capital market in countries other than the United States. Asia remains, largely, an unexplored territory. However, because of their fast developing venture capital market, Asian markets are an ideal ground (Scheela, 1994) for research in venture capital.

The recent surge in venture capital has sparked interest in venture capital by investors and policy makers creating more room for research (Gompers, 1998). For policy makers, attempting to promote venture capital, it is critically important to find out the different aspects of the venture capital market which are important for making more venture capital available and insuring the success of enterprising new ventures (Poterba, 1989; Gompers and Lerner, 1997; Jeng and Wells, 1997). For investors, better understanding of the market will improve their chances of focused

investment strategies. Venture capital firms and companies financed by venture capital operate in an environment where the size is relatively small but the risks are high. For researchers, this harsh environment presents extreme and borderline cases for the testing of not only business theories but also other emerging theories from a number of disciplines (Kierulff, 1986; Brophy, 1986), providing new opportunities for research.

While researchers have taken a keen interest in value added by venture capital firms in their portfolio companies in the last twenty years, this area of research is still relatively new. Many venture capital firms pride themselves on and advertise their value-added potential; however, their contribution to the portfolio companies has never been proven categorically by research. While previous research has confirmed that firms backed by venture capital perform better, the actual value added analysis by researchers has sometimes produced conflicting results. Thus there is room for further research on the value added question (Barney, 1994; Gompers, 1998).

The research conducted, so far, in value addition by venture capital firms has discovered many factors, which affect this relationship. Although value-added has been measured differently, there seems to be strong indications that the presence of certain factors does affect value-added without regard to how it is measured. There has been, however, little attempt to classify these factors in a logical relationship to each other and the value-added phenomena. Classification of these factors will help future research in three different ways. Firstly, it will be clearer to the researchers exactly what is being measured and how it relates to other factors being considered. Secondly, the classification of these factors will help in a more focused research. Lastly, identifying broad classifications may also explain the reason for conflicting research results.

Another noticeable feature of previous research in value added by venture capital firms is the lack of a theoretical base. Sapienza et al. (1996) has noted that studies of venture capital firm's

activities and value added have tended to be descriptive and somewhat atheoretical. There is thus, a need to put together a theory, which explains the basic model relating to value addition that is also in line with the research conducted in this area.

A large majority of value added research has been conducted in the United States which is a mature venture capital market. Although some research has been conducted at international level (Sapienza et al., 1995, Sapienza et al., 1996), it is limited to Europe which shares a comparatively similar culture with United States. A research study conducted in a different cultural setting will provide more information about how the value added question responds to cultural differences and how value added is seen in a developing venture capital market

Most of the previous research studies have analysed the different activities that venture capitalists are involved in with their portfolio companies as an indication of value added without going into the potential of venture capital firms to add value or the potential of portfolio companies to absorb value. Sapienza et al (1995), however, have explored the value added question on the basis of dependency theory (Pfeffer and Salancik, 1978). He argues that value may be the result of resource dependence of the portfolio company. Thus, value added can be seen as a resource question.

This study is an attempt to build on all the above ideas. As discussed in the next chapter, the resource exchange perspective, in view of the network-dyad relationship between a venture capital firm and a portfolio company, has been identified as a more appropriate theoretical base as an explanation of value-added. An effort has also been made to put together a comprehensive model of value added which is also in line with the research conducted in this area.

4 Chapter 4: Theoretical Framework

4.1 Introduction

The resource-based theory, around which the construction of propositions revolves, is explained in this chapter. The nature of the relationship (network dyad) between the venture capital firm and the portfolio company is also described. The later explanation of the resource exchange paradigm and theoretical model logically follows from both of these. This chapter also includes a discussion of the resource exchange model as applied to the relationship between venture capital firms and their portfolio companies.

4.2 Resource²⁶ Based View of the firm

Within the strategy field, scholars have been concerned primarily with explaining the differences in firm performance (Rumelt et al., 1991). Out of many possible explanations, two prominent theories that, arguably, have made major contributions to understanding these differences are transaction costs theory and resource based theory of the firm.

Although the term resource-based was originally attributed to Wernerfelt (1984), the resource-based paradigm is primarily based on the seminal work of Edith Penrose (1959) and Joseph Schumpeter (1934). The theory argues that the differences in firms' performances are primarily because of the heterogeneity of their businesses (Barney, 1991; Rumelt, 1991). The unique assets and capabilities of each firm are important factors, which give rise to imperfect competition and provide opportunities for firms to reap super-normal profits. Early strategic decision models, based on the theory, propose setting rational objectives followed by an internal appraisal of capabilities and an external appraisal of outside opportunities. The resultant fit between

²⁶ The term resources has been used in this thesis to indicate resources, capabilities or resource-based capabilities.

capabilities and opportunities shape a firm's feasible expansion path, diversification and growth strategies (Mahoney & Pandian, 1992; Thomas et al., 1999; Ansoff, 1965). Novel combinations of resources resulting from accumulation and exchange also generate new sources of value for firms (Schumpeter, 1934; Moran and Ghoshal, 1996). This process also encourages innovation as it feeds on diverse resource inputs (Kanter, 1988) and combinative capacities (Kogut and Zander, 1992).

Since the list of resources possessed by firms is likely to be long and all resources may not create competitive advantage, researchers have tried to simplify the identification process by characterising and categorising these resources. Barney (1991) proposed that advantage-creating resources must possess the attributes of value, rareness, inimitability and non-substitutability. Grant (1991) has argued that the level of durability, transparency, transferability and replicability are important factors. Amit and Shoemaker (1993) have produced a list of eight characteristics of advantage creating resources²⁷ while Collis and Motgomery (1995) have limited these to five²⁸.

The efforts to classify resources have been plagued by nomenclature problems. The terms more commonly used in the literature are skills, competencies, resources, capabilities and even resource-based capabilities. Majoor and Witteloostuijn (1996) define resources as tangible and intangible assets, which are tied semi-permanently to the firm. Some writers used the term resources to refer to anything, which could be thought of as a strength or weakness of a given firm (Learned et al., 1969; Wernerfelt, 1984). More recent writers have used the term to mean positive assets and attributes enabling conception and implementation of strategies that improve effectiveness (Draft, 1983; Barney, 1991). There have been numerous attempts to categorise

²⁷ Namely, complementarity, scarcity, low tradability, inimitability, limited substitutability, appropriability, durability and overlap with strategic industry focus.

²⁸ Inimitability, durability, appropriability, substitutability and competitive superiority.

resources starting with the basic classification by Ansoff (1964) of physical (inventory, plant), monetary (money, credit) and human (labor, management). Andrews (1971) later added corporate competencies to this classification. The concept of competencies further evolved into a more detailed description of organizational resources (Hofer & Schendel, 1978) and reputational resources (Dollinger, 1995). Table 4.1 presents a comprehensive view of resource classification in view of past research. It is based on ideas derived from Brush et al. (1997) and Fahy (2000).

While the resource-based theory is considered relevant to all firms, it is generally believed to be particularly suitable for new and small businesses (Cooper et al., 1991; Handjimanolis, 2000). Dierickx and Cool (1989) have drawn a distinction between stock and flows of resources. They argue that the flow of resources not only increases stock of resources but also ensures that critical stocks are not dissipated or rendered useless. As small and new ventures have fewer stocks of resources, the most critical role of the entrepreneurs of small and new ventures is the acquisition, development and application of resources that can lead to competitive advantage and superior performance.

The union of the resource based view with strategic management started in early 80's (Rumelt, 1984; Wernfelt, 1984; Barney, 1986b; Teece, 1982). Resource-based theory, in recent years, has contributed significantly to the literature on strategic management (Peteraf, 1993; Grant, 1991; Mahoney and Pandian, 1992). While Porter's (1980) book shifted the attention toward external, industry-based competitive issues, resource-based theory has directed scholars back toward the internal strengths and weaknesses of the firm (Priem and Butler, 2001 a).

4.1 Classification of Resources

Basic Classification	Sub Classification	Definition
Tangible Assets (Hofer & Schendel, 1978)		Facilities and Equipment (Hofer & Schendel, 1978), (Wernerfelt, 1989)
Fixed Assets (Wernerfelt, 1989)		Technology (Dollinger, 1995)
Property Based (Miller and Shamsie (1996)		Financial Resources (Ansoff, 1964) (Bygrave, 1992)
Capabilities (Hall, 1992), Invisible Assets (Itami, 1987)	Organizational (Brush et al., 1997; Brush and Greene, 1996; Fahy, 2000).	Organizational relationships, structures (Tomer, 1987) Routines, culture (Hofer & Schendel, 1978; Wernerfelt, 1989) Knowledge (Dollinger, 1995) Achieved Attributes (Becker, 1964) Education and Experience (Cooper, 1981; Glade, 1967) Track Record and Reputation (Dollinger, 1995; Brophy, 1992) Training (Barney, 1991) Relationship and networks (Bordieu, 1983) Family (Liebenstein, 1968) Race and ethnicity Political connections (Glade, 1967) Reputation of groups (Barney, 1991)
Intermediate goods (Amit and Shoemaker, 1993)	Individual (Fahy, 2000) Human (Brush and Greene, 1996; Brush et al., 1997)	Achieved Attributes (Becker, 1964) Education and Experience (Cooper, 1981; Glade, 1967) Track Record and Reputation (Dollinger, 1995; Brophy, 1992) Training (Barney, 1991)
Core Skills (Irvin and Michaels, 1989)	Group (Fahy, 2000) Social (Brush and Greene, 1996; Brush et al., 1997)	Relationship and networks (Bordieu, 1983) Family (Liebenstein, 1968) Race and ethnicity Political connections (Glade, 1967) Reputation of groups (Barney, 1991)
Knowledge-based Miller and Shamsie (1996)		Trademarks, patents and databases (Hall, 1992, Williams, 1992)
Blueprints (Wernerfelt, 1989)		

Despite the fact that, in recent years, there has been a renewed interest displayed in the role of resources as the means of creating competitive advantage (Coyne, 1986; Ghemawat, 1986; Hall, 1989; Grant, 1991; Mahoney and Pandian, 1992; Williams, 1992), the resource based view does suffer from a number of weaknesses. It is often difficult to pinpoint the resource separately or in

combination, which accounts for a firm's competitive advantage. Some researchers have gone to the extent of saying that the ultimate resource responsible for a firm's competitive advantage can never be identified (Collis, 1994). Moreover, resources cannot be evaluated in isolation because their value is determined in the interplay with market forces. A resource that is valuable in a particular industry or at a particular time might fail to have the same value in a different industry or chronological context (Collis and Montgomery, 1995). The fact that some resources may become specialised, in essence, producing a bundle (or bundles) of co- specialised assets (Teece, 1986; Conner, 1991; Barney, 1991) further complicates the issue. The attempt at developing a resource based predictive model of new venture success, failure and growth (Cooper et al., 1991) has been met with scepticism. The identification process also seems to be retrospective rather than predictive since once the factors, which have contributed to the firm's success, are recognised, they are labelled as a source of competitive advantage. This particular aspect of resource-based theory has led some scholars to term it as tautological (Priem and Butler, 2001 b)²⁹.

4.3 Venture Capital Firm/Portfolio Company Network Dyad

The relationship between the venture capital firm and the portfolio company does not fit precisely into well-known relationships of either market or hierarchy. In the market relationship governance relies largely on price for control. It is basically competitive rather than symbiotic. Hierarchical relationships are governed by authority as between an employer and an employee. Researchers, who follow the market/hierarchy approach, believe that an agency relationship, which is a form of hierarchical relationship, exists between the venture capital firm and the portfolio company (Ried, 1996; Fiet, 1995; Chan et al., 1990). Since there is room for

²⁹ For an interesting exposé on the status of resource-based view as a theory see Priem and Butler (2001 a), Priem and Butler (2001 b) and Ryall (1998)

opportunistic behaviour by the principal and the performance of the portfolio company depends, to some extent, on competency of the venture capital firm, the existence of an agency relationship between the venture capital firm and the portfolio company is not always accepted. Cornelius and Su (2000) assert that several covenants in the contractual arrangement, between a venture capital firm and a portfolio company, are not identifiable with a classic principal/agent relationship. Many venture capitalists believe this relationship to be partnership oriented rather than a principal/agent relationship (Cornelius, 2000). Some venture capitalists see the principal/agent relationship as a downgrading of relations. "It is important that both parties share the same interest and act in the same direction to avoid the principal/agent relationship"³⁰. Smith (1988) suggests that the relationship between the two can be more appropriately viewed as reciprocal agency obligations. Thus, there is doubt whether traditional agency theory can be applied to the venture capital firm/portfolio company relations. It is worth noticing that the venture capital firm/portfolio company relationship is not the only one, which does not correspond adequately to the two popular notions of agency and hierarchy³¹. There is, thus, a need to examine alternative relational arrangements. These alternatives have been variously called quasifirm (Eccles, 1981) relational contracting (Macaulay, 1963) hybrids (Powell, 1987) and networks (Powell, 1990).

Powell (1990) first offered network form as a distinct organisational arrangement compared to hierarchical or market relationships. Networks can be defined as a set of nodes and relationships that connect the nodes (Formbrun, 1982). A more recent definition of networks by Dubini and Aldrich (1991) terms them as patterned relationships between individuals, groups and

³⁰ Personal correspondence: Frédéric De Laminne, General Manager, E-Capital, Belgium, May 2, 2001.

³¹ These relationships have been shown to exist in a variety of settings including international business (Contractor and Lorange, 1988), Japanese textile (Dore, 1983) Swedish large manufacturing companies (Håkasson, 1987) and entrepreneurial firms (Jarillo, 1988).

organisations. From the resource-based perspective, network ties are considered as links to clusters of resources (Burt, 1992; Tichy, 1981). Network relationships between firms are believed to be lateral rather than vertical (Baker, 1992).

The literature on networks has been taken in two broad directions. Researchers adopting the first direction are concerned with networks of organizations and their patterns of interaction. The unit of analysis is the broad network itself (Borch and Arthur, 1995; Grandori and Soda, 1995; Gray 1985; Hakansson and Johanson, 1993). Researchers adopting the second direction focus on the firm as the unit of analysis and are concerned with understanding how the firm creates and manages a network (Aldrich and Zimmer 1986; Dubini and Aldrich 1991; Venkataraman 1989).

Generally speaking, firms more likely to engage in network arrangements will be those that need to exchange difficult to codify knowledge intensive skills, best transferred through processes of collaborative information sharing. Powell (1990) has particularly mentioned firms engaged in fast moving industries with short product cycles as most likely to engage in network partnerships in order to reposition products rapidly and respond quickly to changing market conditions and technological developments. Dubini and Aldrich (1991) have added new ventures to this list. In a network exchange relationship, the value of the resource is one of the central factors explaining relationship behaviours and outcomes (Pfeffer and Salancik, 1978; Pfeffer and Nowak, 1976; Thorelli, 1986; Harrigan, 1986). Bradach and Eccles(1989) have ascribed the control elements of price, authority and trust to market, hierarchical and network arrangements respectively. Complex network relationships may be combinations of all or any two arrangements with control mechanisms existing in different proportions. In a network form of arrangement, additional control elements like personal relationships, reciprocity, co-ordination, concern for reputation

etc. also play an important role (Larson, 1992). While economic control is present, social control plays a crucial role in network arrangements.

Portfolio companies use a primary resource (finance) supplied by the venture capital firm. The venture capital firm is not usually actively involved in the day-to-day utilisation of this resource. Under these circumstances, a predominant control mechanism for the venture capital firm remains trust. In the case of venture capital firm/portfolio company relations trust has two dimensions. Trust in the managerial abilities of the portfolio company for effective utilisation of the resource and moral trust in the management. However, venture capital firm/portfolio company relations are not a matter of trust only and other control elements also come into play. For example, personal relationships between venture capitalists and the CEO of the portfolio company, exchange history, risk level of the portfolio company etc. have been known to affect relational arrangements between the parties (Barney et al., 1989).

The network model is believed to offer several advantages over other models (Larson and Starr, 1993). It is considered dynamic because it focuses on a complex relationship between the units. It emphasises exchange processes between entities and identifies the economic and social aspects of these exchange linkages. It also highlights the fickle nature of exchange relationships (Gabarro, 1987), which allows for further understanding of the stability and flexibility of collective activities. It also has the potential to account for the forces involved in organisational growth (Jarillo, 1988).

Inter-organizational relations can be studied in a multitude of ways, ranging from the investigation of overall network properties, to dyad properties and to relational properties of the network's member firms (Keister, 1999). One of the fundamental premises in this thesis is that portfolio companies and venture capital firms operate in a network environment and also use network nodes to obtain resources. The relationship between the venture capital firm and the

portfolio company is one such relation. While we cannot ignore the network nature of the relationship, it is viable to study this relation in a dyadic framework³² in what Larson (1992) terms as a network dyad.

4.4 Resource Exchange and Inter-Firm Relations

Since it is posited that a complex network arrangement exists between the venture capital firm and the portfolio company, it then follows that social aspects of the relationship should play a vital role toward mutual satisfaction and the success of the alliance. Larson (1992) has shown that the social aspects of alliances, as they exist between the venture capital firm and the portfolio company, are critical to their co-ordination and maintenance. She specifically showed that when the economic interest of entrepreneurs and outsiders are governed through positive social interaction, such partnerships endure. With these considerations in mind, it would be worthwhile to look for the explanation of a fruitful relationship, between the two, from a social point of view. Thus a model, which relies on social principles effecting relationship dimensions, will be put to an appropriate use if applied to the relationship between the venture capital firm and the portfolio company. Thus there seems to be a sufficiently strong case to explain the relationship between the venture capital firm and the portfolio company from social exchange perspectives under the banner of resource-based theory.

The resource exchange paradigm, which can be termed as a hybrid of resource-based and social exchange theory (Cook and Emerson 1984; Emerson 1976), is not new. The social exchange, a sociological theory, is based on the exchange of rewards and costs to quantify the values of outcomes, from different situations, for an individual. The social exchange theory is comprised of three main concepts, relational outcomes, relational satisfaction, and relational stability. Resource

³² Some researchers have treated the relationship between venture capital firms and the portfolio company as essentially dyadic (Roure and Maidique, 1986; MacMillan et al., 1987; Sapienza, 1992).

exchange theory focuses on the exchange of resources between units applying the social exchange principles.

Resource exchange theory can be divided into two closely related approaches. The first deals with micro processes in an organisation. Important work in this regard includes Thibault and Kelley (1959) Homans (1961) and Emerson (1962), who have relied on ideas from operant psychology (Blau, 1964; Coleman, 1966). These works were primarily based on an individual oriented theory, which studied individuals and very small groups. The second strand of the resource exchange model has been developed in the work of Yutchman and Seashore (1967) and White (1974) and a number of other writers, who have focused primarily on the macro-organisational process. The works of Yutchman and Seashore (1967) and White (1974) are also important because they brought into consideration the constraints and the contingencies that are imposed on the organisation by outside factors. Since this development, the resource exchange paradigm has been a basis for a number of studies on agency theory and the relationship between management and the owners of companies (Eisenhardt, 1989; Glasberg & Schwartz, 1983). Similarities between individual oriented and firm oriented resource exchange theory has remained. Georgiou (1973) has explained this by arguing that a focus on the organisation as a unit of analysis is arbitrary and the basic strategic factor in the organisation remains the individual.

4.5 Application of the resource-exchange paradigm to the value added question

In addition to industry experience, the operational skills of new ventures' management are also important to the development of the venture (e.g., Roure & Keeley, 1990; Rock, 1991). As the management of new ventures differ in industry experience (MacMillan et al., 1989; Sapienza 1992), they are also likely to differ in the level of operational skills and the resources available

within the organisation. Efforts by new venture management to acquire skills, technological or otherwise, are facilitated by their relationship with venture capitalists. For a new venture management, venture capitalists provide an initial channel for acquiring critical information and resources (Barney et al., 1996; Fiet, 1995a). The timely acquisition of resources from venture capital firms is a comparatively low-cost method of adding to the resource pool and reducing the risk of failure (Anderson & Narus, 1990; Fiet, 1995 a; Sapienza & Amason, 1993). It is argued that since the success of a firm primarily depends on the availability of resources and the capability to use them efficiently, the perception of value addition, from whatever sources, will depend on the receipt of these resources by the portfolio company. It is further argued that the perception of value addition by a venture capital firm will depend on the existence of a relationship in which both sides perceive an exchange of resources. Thus, value added is a function of resource exchange. The question of determination of resources has been left open at this point, because there are limitless ways to conceive of a firm's resources (Shrader and Simon, 1997).

The kind of resources that a firm needs to gather from its environment depends on its objectives. Entrepreneurs, and hence portfolio companies, tend to specialise in two types of resources. The first resource needed is the ability to identify un-exploited opportunities and the skill to combine intangible and tangible resources to exploit these opportunities in a novel fashion. The second resource is the capacity to specialise in the day-to-day development of new businesses activities (MacMillan et al., 1989). Venture capital firms, on the other hand, specialise in creating networks of individuals and institutions to reduce the costs of acquiring capital, to find customers and suppliers and to establish the credibility of portfolio companies (Lam, 1991; MacMillan et al., 1989; Sahlman, 1990). Consequently, the resource composition of venture capital firms and portfolio companies may vary. There can also be considerable overlap between the resources, their quality, magnitude and concentration within venture capital firms and their portfolio

companies. A portfolio company may find resources possessed by a venture capital firm attractive and beneficial, since according to resource-based theory, an increase in the pool of resources improves performance of a firm.

The perception of higher value added should depend, to a large extent, on convergence of perspective (Sapienza and Timmons, 1989) and a meeting of minds of the CEO of the portfolio company and the management of the venture capital firm. This is, however, only one factor among many variables in the value-added model that effect the value-added perception. This factor, however, may not be the basis of a value-added relationship. For example, an important relationship characteristic of prior affiliation has been found to be linked with initial satisfactory relations but not to the longer-term benefits of the partners (Saxton, 1997). Other variables in the category of relational characteristics are geographical proximity (Gomez-Mejia et al., 1990), compatibility of objectives, clear expectations and obligations, trust and personal compatibility (Larson, 1992). Similar variables have been categorised as relational dimensions and accounted for as factors, which, though not the basis for exchange relation, do affect the breadth of resource exchange. However, the link between shared vision and relational dimensions suggests that some relational factors may be influenced by the shared vision of the partners. For example, common values and beliefs provide the harmony of interest that minimise the possibility of opportunistic behavior (Ouchi, 1980; Tsai and Ghoshal, 1998) and promote trust. Thus, it is argued that the value-added phenomenon is a logical consequence of the venture capital firm/portfolio company network dyad, created by the situation in which they find themselves. Thus, even in cases where convergence of perspective is limited, the entrepreneur will see a venture capital firm as adding value if useful resources are being shared.

4.5.1 The Venture Capital Firm/Portfolio Company Resource Exchange Model

In order to develop the resource exchange model presented as figure 4.1, a model of venture performance with environmental interaction conceived by Chandler et al. (1994) and the process model of entrepreneurial dyads as developed by Larson (1992) and Larson and Starr (1993) have been relied on. Basic ideas from both these models have been incorporated and extended to the relationship between venture capital firms and their portfolio companies.

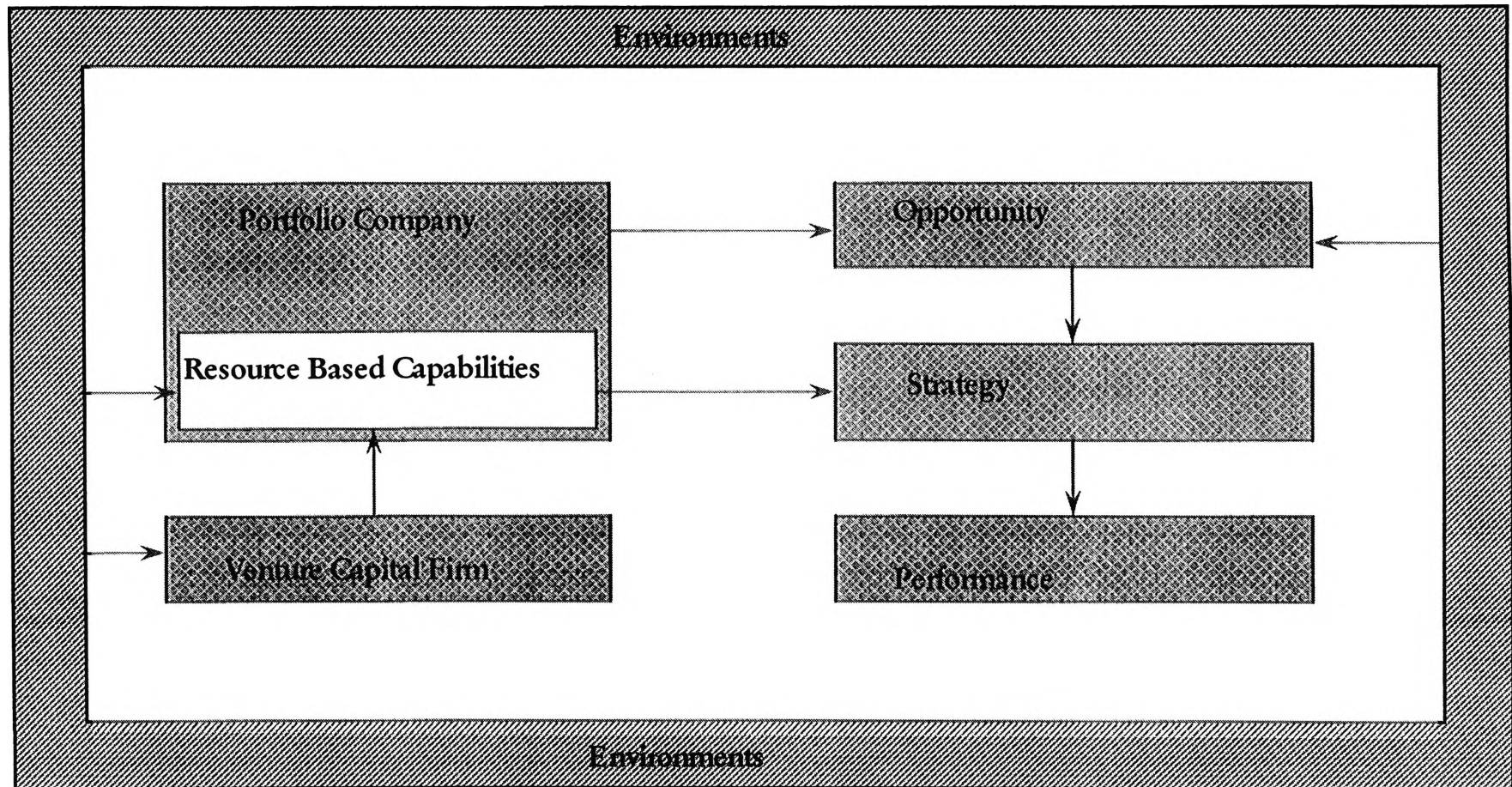
According to Larson (1992) network dyads develop in three phases. The coming together of dyads requires some preconditions of exchange, which enhances the chances of early co-operation between them. Larson and Starr (1993) argue that personal reputation; histories and personal friendships are important factors in explaining why firms form dyads. Knowing people personally and by reputation increases the chances of better assessment of their capabilities, which can result in better economic relationships later. The relationship based on reputation also puts a burden on dyads to succeed because failure could have a serious impact on the reputation of both the parties and subsequently, on business.

Resources are obtained using “relational contracts” or a social exchange relationship based on customs, practices and mutual expectations. Later only those dyadic relationships are retained and developed which supply sufficient resources. Larson and Starr(1993) argue that network relations start only as one dimensional i.e. economic or social but later take on a two dimensional appearance involving both social and economic exchanges or “socio-economic exchanges”. The second phase of the association establishes conditions necessary to build the relationship. These necessary conditions include mutual economic advantage and a trial period. The participants, however, may not enjoy the benefits proportionately. In the next phase, rules and procedures are established and clear expectations are outlined. A relationship of mutual trust is established based

on reciprocity. The last phase results in further integration and the association is primarily governed by social controls. The focus of Larson's (1992) argument, explaining the formation and workability of a network dyad is based on relationship characteristics rather than the network participant's characteristics.

As perceived by Chandler et al. (1994) at the initial level, founders interact with the environment to conceive or discover business opportunities. Of the available opportunities, some get selected. Opportunities are created by changing circumstances, chaos, confusion, inconsistencies, lags or leads, knowledge and information gaps and a variety of other vacuums in an industry or market (Timmons, 1990). The competitive advantage of the firm depends on how effectively it can take advantage of the opportunities, which ultimately depend on an entrepreneur's perception of both the environment and the internal abilities of the firm to exploit these (Andrews, 1971; Thompson and Strickland, 1990). Resources can conversely, limit the choices a firm may have and ultimately, the level of profit it may expect (Wernfelt, 1989).

Figure 4.1. Resources, Venture Strategy and Performance



Based on Chandler & Hanks, Market Attractiveness, Resource-Based Capabilities, Venture Strategies And Venture Performance, *Journal of Business Venturing*, 9:331-349, 1994

One of the basic assumptions of resource-based theory is that resources and capabilities can vary significantly across firms³³ (Barney and Hetterly, 1996). It is the heterogeneity of these productive resources that gives each firm its unique character and effectiveness (Penrose 1959). Organisations, through transactions with the elements in their environment, acquire resources. This is true about all organisations whether we are talking about public organizations, private organisations, small or large organisations or organisations that are bureaucratic or organic (Burns and Stalker, 1961). Opportunities, however, are not fixed and may change with a change in conditions and/or change in a firm's knowledge and consequently with a change in the internal supply of resources. The availability of resources within a start-up firm depends, among other factors, on the founders' ability to gather these from the environment and develop strategies for effective use (Grant, 1991). If a firm has, or has access to, adequate resources it can survive easily, grow more rapidly, is more profitable and has more "organisational slack" (Singh et al., 1986). Thus a firm in possession of a wide variety of resources is likely to have more opportunities available to it and will be able to exploit more of the available opportunities. A positive relation has already been established between perceived resource-based capabilities and the performance of start-up manufacturing firms (Chandler et al., 1994).

This model has been modified and the venture capital firm has been introduced as an entity that supplies resources and supplements the efforts of the portfolio company to gather resources from its environment. Like any other business, the venture capital firm gathers resources and capabilities from its environment, which enables it to exploit the available opportunities. As part of its business, the venture capitals firm transfers its most important resource i.e. finance to new ventures and entrusts them with its competent use. In order to ensure that this resource is used

³³ Heterogeneity.

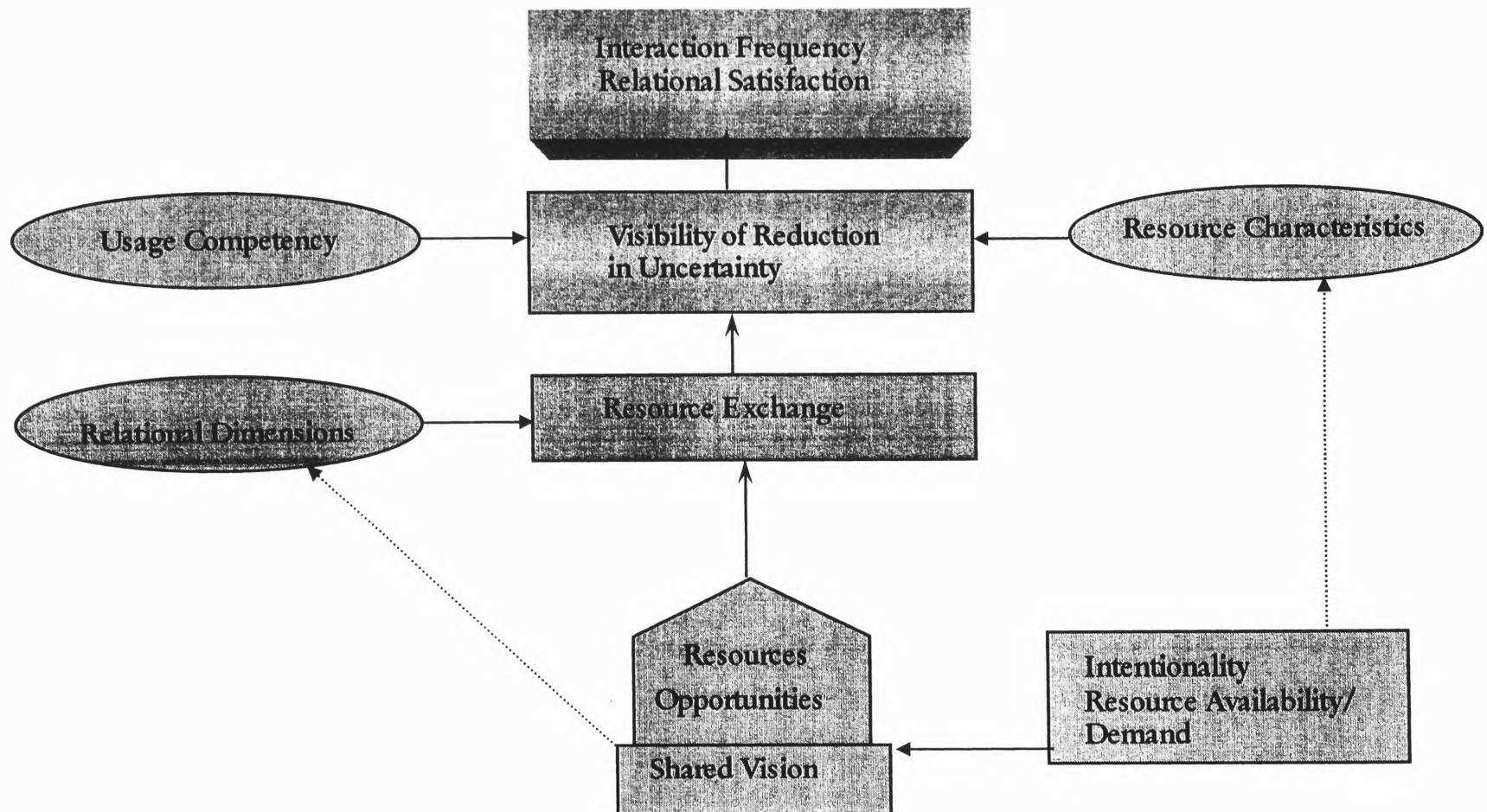
effectively, the venture capital firm may provide other resources as well or supplement the efforts of the portfolio companies to gather more resource based capabilities from the environment.

A venture capital firm's resource contributions span all three broad categories of resources³⁴. From a venture capitalist's perspective, making its own resources available to the portfolio company will increase the portfolio company's pool of resources and enhance its chances of not only having wider choice of opportunities but also their effective exploitation. "[The] More talent and expertise in different areas that VC brings to the table, complement the company founders."³⁵ This increases the likelihood of successful outcomes and subsequent returns to the venture capital firm. Both the venture capital firm and its portfolio company possess a unique pool of resources. The portfolio company needs all those resources that will expand the opportunities and enable it to exploit them most effectively. Moreover, for growth-oriented companies especially, additional resources are needed to search for opportunities. A venture capital firms has a further need for resources because it needs to provide resources for its own survival as well as to provide for the portfolio company if necessary.

³⁴ Tangibles, invisibles and knowledge-based.

³⁵ Personal correspondence: Comments by a venture capitalist from Singapore (identity kept confidential on request), August 15, 2000.

Figure 4.2: VC/PC Value Added Relationship- A Resource Exchange Perspective



Mere possession of resources is not enough and any possible resource exchange requires a thorough awareness of the venture capital firm's, and the portfolio company's, resources. Venture capitalists should "understand what competencies we have as VCs [venture capitalists]. Ensure that the VC [venture capitalist] is organized in a way that these competencies are transferred to the portfolio company..."³⁶. On the other hand "the more knowledge they [venture capitalists] have about the company [portfolio company] the more they can help them re biz [business], re networking etc"³⁷.

Clear assessment of an organization's resources is also important for the determination of the resource gap, the need to fill this gap from the environment and the extent of the resultant sacrifice/cost. Knowing the resources and capabilities of each other helps both the parties avoid any uncertainty and misunderstanding in the subsequent relationship and develops an economic trust in each other's capabilities. Thus, how both the venture capital firm and the portfolio company assess each other in the initial stages has an influence on subsequent relations and involvement and thus value added. For venture capital firms, part of the reason for the due diligence process is the exploration of the resources possessed by the portfolio company and their suitability and usefulness in survival efforts. Being part of the venture capital firm's functions, this information is even gathered by venture capital firms who have no intention of being significantly involved with the portfolio company later on. As far as portfolio companies are concerned, past research reviewed does not reveal any factor that has a significant bearing on the choice of the venture capital firm by the portfolio company. However, it has been suggested

³⁶ Personal correspondence: Comments by a venture capitalist from Singapore (identity kept confidential on request), August 19, 2000.

³⁷ Personal correspondence: Harjeev Kandhari, New Media Spark, United Kingdom, April 18, 2000

that the portfolio companies should be careful in choosing financial partners as the venture capital firms vary in the resources that they possess (Ehrlich et al., 1994; Sapienza, 1992).

As far as the resource assessment of the portfolio company is concerned, it can be argued that the business operating in a riskier environment, will have a lower assessment of its own resources and thus a higher demand for resources than a business operating in a less risky environment. The factors that affect the riskiness of the business will also affect the rating of available resources and the need to welcome input. This argument is based on a previous research finding which suggests that assistance is more highly valued when the task involves greater complexity and uncertainty (Ehrlich et al., 1994; Sapienza, 1992; Barney et al., 1996). The growth stage, the technology being pursued and the performance of the portfolio company are some of the factors, which have been found to finally lead to a greater involvement of the venture capital firm (Sapienza, 1992; Sadtler, 1993). Since this thesis argues that a portfolio company's self-resource assessment and a venture capitalist's resource assessment of the portfolio company may finally impact on the involvement and thus value added, the same risk factors³⁸ have been taken into consideration for measuring resource perception.

It is argued that several factors may affect how venture capital firms perceive, or are perceived to be in possession of, adequate resources. According to resource exchange theory, possession of resources is translated into better performance for a business. Since performance comprises multiple criteria apart from ROI, well performing venture capital firms are distinguished by certain characteristics derived from a successful track record. As reputations travel, investors are more likely to seek out and invest with successful venture capital firms resulting in an increase in capital under management and arguably the hiring of more professionals. Thus, the amount of

³⁸ i.e. growth stage, technology and performance.

venture capital under management and the number of professionals working for a venture capital firm may be an indicator of performance. Successful venture capital firms are also expected to last longer in terms of the number of years in operation. The type of venture capital firm may also have some bearing on how it perceives its own resource pool.

The dependence of any organisation on another, and the consequent resource exchange, will arise in proportion to a need for the resources which the supplying organisation can provide to the dependent one (Thomson, 1967). Thus, for a possible exchange relationship, the need of the portfolio company must be matched by the availability of resources within the venture capital firm. The term matching is used to indicate the availability and the need for a resource that will contribute toward the realisation of the portfolio company's objectives immediately or in the future (White, 1974). The absence of a reasonable match can lead to adverse consequences. For example, if the portfolio company already possesses sufficient industry experience and teams up with a venture capital firm accustomed to providing extensive industry advice, their overlapping expertise may increase conflict (Barney et al. 1996). The need for resources primarily depends on perception. Sapienza et al. (1986) have indicated that even if the portfolio company is actually short of a resource, it may not seek that particular resource regardless of how the venture capital firm perceives the situation.

The possession of information and the awareness of the demand and supply of resources may not trigger a resource transfer unless it is backed by a willingness of the parties to affect the transfer. This is called "intentionality". Intentionality depends on many factors such as company policy, lead role, time, etc. These factors will be discussed in further detail in the next chapter.

The portfolio company, per se, has an incentive to utilise the resources of the venture capital firm because they are free of incidental costs. Moreover, new entrants into a business may have to pay

higher prices to acquire these resources compared to prices paid by existing firms (Wernfelt, 1984). There are, however, other factors, which may effect the portfolio company's decision to resort to venture capital firms. According to the resource dependence theory, organisations tend to avoid dependencies and being controlled by others (Pfeffer and Salancik, 1978). Portfolio companies, for fear of loss of control and avoidance of unnecessary interference by the venture capital firms, may not be willing to be dependent and be involved in an exchange relation. Conversely, the portfolio company may not resist the venture capital firms' interference for two reasons. Firstly, an affiliation with a venture capital firm enhances the portfolio company's reputation by earning it legitimacy and credibility. Secondly, the failure of a relationship could have a serious impact on its reputation and business prospects. How important a particular resource is to the portfolio company will affect its readiness to sacrifice other considerations and its choice to avoid interaction will be considerably weakened (Harrigan; 1984). Furthermore, just as venture capital firms have their own policies regarding the extent of their involvement, the portfolio management team may have its own resource strategy likely to influence resource exchange relations. The possibility of resource exchange also considerably weakens in the presence of a negative attitude toward it. The question of resource exchange is also affected by the particular venture capital culture. There is sufficient evidence that the local venture capital culture has a profound effect on venture capital strategies, including involvement issues (Jeng and Wells, 2000).

It is theorised that an exchange relationship between the venture capital firm and the portfolio company will exist if the matching of resources are backed by a willingness to exchange. Both the parties should share a common perception about specific opportunities and the resources needed to exploit the opportunities effectively. The resource exchange relationship, as described, is dynamic and there is a constant shift between the opportunities and consequent requirements for

resources, as perceived by both parties. This argument has been derived from the belief that organisational emergence happens in spurts, where a trigger creates a revolution or reconfiguration of resources (Gartner, 1985). These triggers, for a new venture, may be internal or external. For a portfolio company, an internal trigger may be reaching a milestone for further funding by venture capital firms (Lichtenstein, 1997). External triggers may be associated with industry-based sources of support (Brush and Greene, 1996).

Resource characteristic will have little bearing on the initial exchange process. However, particular characteristics, may add to the usefulness of a resource thereby reducing uncertainty and leading to an enhancement of a value added relationship. Although the terminology used has been different (Peteraf, 1993), there appears to be general agreement in the related literature about the resource characteristics that contribute to a firm's sustained competitive advantage. At the most basic level, such resources must be valuable (i.e., rent producing) and nonsubstitutable (Barney, 1991; Dierickx & Cool, 1989). In other words, for a resource to have enduring value it must contribute to the portfolio company's capability and the portfolio company should not be able to acquire this resource easily through alternative means. Next, resources must be rare and/or specific to a portfolio company (Barney, 1991; Reed & DeFillippi, 1990). That is, they must not be widely spread in an industry and easily identified as associated with a particular company, thus making them difficult to transfer or trade. Finally, such resources must be difficult to replicate because they are either tacit (causally ambiguous, that is, scarce because of the unique train of events that led to their accumulation) or socially complex (Teece, 1987; Winter, 1987). Tacit resources are skill based and people intensive. Such resources are "invisible" and based upon learning-by-doing. These resources are accumulated through experience and refined by practice (Itami, 1987; Polanyi, 1962). Socially complex resources depend upon large numbers of

people or teams engaged in coordinated action such that few individuals, if any, have sufficient breadth of knowledge to grasp the overall phenomenon (Barney, 1991; Reed & DeFillippi, 1990).

The explanation so far, of a value added relationship may be interpreted as an attempt to “under socialise” (Granovetter, 1985) this complex alliance resulting in a model in which the importance of personal relationships is downplayed. A balanced approach would suggest that this relationship should be considered a combined function of resource exchange and formation of a satisfactory social relationship (Saxton, 1997). However, it is argued that the social side of the issue only explains why this alliance is formed or relationship enhanced (Gulati, 1999) and it is not an essential element for the existence of a value added relationship.

Once the resources have been passed on to the portfolio company they must be used effectively. Effective usage results in a visible reduction in uncertainties, which can lead to a value added relationship (Bygrave and Timmons, 1992). Hickson et al. (1971) argue that power accrues to those in the organisation able to reduce uncertainties for the organization. Thus in a dyadic relationship if both parties believe that uncertainties have been reduced because of the exchange, it will result in a greater influence of the venture capital firm on the portfolio company and spur higher levels of interaction and generate relational satisfaction. Unlike previous research that only considers more frequent interaction by the venture capitalist and the CEO of the portfolio company as an outcome of a reduction in uncertainties, it is argued here that frequency of interaction may also result in a higher level of satisfaction for both the parties. Thus a value-added relationship does not only depend on the frequency of interaction but also on the higher level of satisfaction resulting from the interaction.

There have been a number of studies which have taken up the value added question without really defining value added (Sapienza et al., 1996; Sapienza et al., 1995; Cherin and Hergert, 1988;

Landstrom, 1991). The resource-exchange perspective helps define value added. Since a firm is considered a bundle of resources, any addition in its resource pool is likely to increase its chances of survival. Thus an addition in the resource pool can be interpreted as the creation of value. The resource exchange perspective provides an opportunity to recognise the complexity of the value added question. It cannot be assumed, under this perspective, that value addition gets translated into visible measurable performance. Taking on the resource-exchange paradigm allows participants to recognise that value addition has occurred prior to visible results being obvious. It recognises that the extent of value addition depends also on the nature of the interaction (characteristics of resource). It also takes into account the importance of social aspects of the relationships, which govern value addition. Under this paradigm, the translation of added value is governed by multiple factors, which may not always result in better performance. For example, the resources added will not make such an impact on a company if they do not pass the test of rarity, value and inimitability. Based on the resource exchange theory a strong case can be put forward for value addition from the moment a venture capital firm and a portfolio company decide to establish a relationship. The resource exchange model also makes a distinction between value addition and the maximisation of value addition. Using the resource exchange perspective allows the researchers to make a distinction between stock and flows of resources. As described, considering value addition as a resource flow makes the concept of “value-added” more dynamic than it has previously been considered.

From the theoretical position outlined in this chapter several hypotheses have been extracted relating to the venture capital firm/portfolio company relationship. The next chapter includes the research hypotheses and, after a detailed discussion on their validity, considers both sides of the question before adopting a position.

5 Chapter 5: Propositions

5.1 Introduction

The basis for the research propositions outlined in this chapter have been primarily derived from the theoretical position adopted on the relationship between a venture capital firm and a portfolio company, as described in the previous chapter. In addition, previous research studies have also been used to support the formulation of the research hypotheses.

5.2 Propositions

Very few research studies have examined venture capital in the Asian environment. Those which have, did not focus exclusively on the relationship between a venture capital firm and a portfolio company. Little attempt has been made to explain the dynamics of this relationship in Asia.

Past research in value addition by venture capital firms has covered American and European markets more extensively than Asian markets. The research findings in previous research studies may not be applicable to Asian markets in general because of inherent differences in culture and work values³⁹. As explained in chapter 2, there are cultural, geographical and developmental differences between Asian and other countries in which previous research studies have been conducted. As can be gathered from that chapter, there is very little available information in the way of research studies on the nature of venture capital markets in Asia, including the little dragon countries. Thus, enough arguments seem to exist to warrant a possible difference in the way in which venture capital firms operate in Asia and other countries.

Therefore, some basic assumptions have been derived from the study of the Asian venture capital market as a unit and applied to the Hong Kong and Singaporean venture capital markets

³⁹ Management styles of the venture capital firms have been reported to differ across countries (Hurry et al., 1992).

as a useful starting point for this research. Previous research studies, conducted outside Asia, have also been used to support the propositions derived in this chapter. Following due process, these assumptions will be tested and the findings will add to our knowledge of the impact that culture and work values create in the Singapore and Hong Kong venture capital markets. They will also assist in determining the extent to which the conclusions drawn in this thesis are amenable to broader application.

5.2.1 The Extent of Involvement

An Equity Investors' position is different from other investors. Creditors, for example, are involved in the investee business on a less regular basis than equity investors. While lack of involvement may not show any less concern for the investment, equity investors' greater involvement with the investee stems from the high level of risk in their investments. They rank below all creditors in regard to final settlement, which puts them in the unique position where they will always be the first to record a loss. The higher risk that the equity investors take is compensated by the greater influence that they can exercise over the investee and, consequently, their investment. Thus, the options to exercise this influence, in most cases, impart greater control over the investment to the equity investors than to the creditors. Since equity investors, in better times, gain disproportionately more than other investors, it also gives them an opportunity and incentive to use their existing resources and add value to their investment. Venture capital firms share similarities and differences with other equity investors on many counts, which make their involvement with the investees even more significant. Private investors and venture capital firms prefer funding businesses with a potential for high capital growth (Sullivan, 1991). These investors usually intend to liquidate their investment after a fixed term ranging 5 to 10 years (Wetzel, 1985). However, there are certain marked differences between private investors and venture capital firms. Venture capitalists are professional investors who invest on behalf of others

and have different incentives or disincentives to be involved with the investee than have private investors. Their involvement may be due to their fiduciary duty, as an agent of the suppliers of venture capital funds. For a venture capital firm, acceptable performance allows them to raise follow-on funds and hence is a matter of survival. Because limited liability partnerships are time constrained, suppliers of venture capital funds will not contribute to new partnerships structured by under performing venture capital firms. Thus, there is always a risk of non-renewal if a venture capital firm fails to perform. For a venture capital firm, the disincentive to be involved in its portfolio company may be due to the number of investments being managed, the lack of resources within a venture capital firm useful to a portfolio company and so on. Private investors do not have similar disincentives and they may well seek to help a friend or a family member (Sullivan, 1991) or derive non-financial rewards from assisting other entrepreneurs in the growth of their ventures (Wetzel, 1985). The differences, between a venture capital firm and a private investor, translate into distinct investment and involvement strategies (Florida and Kenney, 1988; Frear and Wetzel, 1990; Ehrlich et al., 1994).

Being an experienced professional involved in a specialist business, the venture capitalist's involvement and contribution is expected to be more than that of other investors (Thurrow, 1992). Earlier research in the United States pointed to both active (Fried and Hisrich, 1994) and passive (Gorman and Sahlman, 1986) involvement by venture capital firms in their portfolio companies. Rosenstein (1988)⁴⁰ found that venture capital firms employed two different approaches to their portfolio companies. Immediately, after making an investment, one group replaced the founders' team with more experienced professional managers. The other group of venture capital firms nurtured and worked with the existing management. In all cases, venture

capital firms put pressures on the management team to achieve objectives that were consistent with the business plan. Rosenstein (1988) concluded that venture capital firms take a highly active role in the management of their portfolio companies, especially through participation on the board of directors. In analysing responses from 62 venture capital firms, MacMillan et al. (1989) performed cluster analyses on the data relating to the involvement of venture capital firms and found a clear emergence of three clusters which they classified as low (*laissez-faire*), moderate and high (close tracker) involvement venture capital firms. The involvement criteria were taken as the number of activities that the venture capital firms undertook with their portfolio companies. Gorman and Sahlman (1986) found that a lead venture capitalist visited each portfolio company an average of 19 times per year and spent 100 hours (8.3 Hours/Month) in direct contact (on site or by phone) with the company. The non-lead venture capitalist visited half as often and stayed 2/3rd as long. Elango et al. (1995) confirmed the existence of three clear groups of investors and found that the high assistance group spent an average of 35.65 hours per month, the middle assistance group spent 12.75 hours and the low assistance group spent an average of 6.76 hours per month with the portfolio company. The non-lead venture capital firm averaged 4 hours per month. A comparison of these two research studies, considering the time gap, could lead to the conclusion that, generally speaking, the venture capital firm involvement in its portfolio has increased over time. The involvement of a venture capital firm in its portfolio company follows a different pattern at the international level. Research has shown that venture capital firms in the Netherlands are less involved with the CEOs of their portfolio companies than in the United Kingdom (Sapienza et al., 1994) and despite a relatively homogenous group of investments, a venture capital firm's involvement does not follow a consistent pattern in France. In Canada up

⁴⁰ Rosenstein's (1988) study was based on interviews with six Dallas (United States) based venture capital partnerships and two venture capital companies (SBICs). He was investigating investor involvement in the management of portfolio companies through board participation.

to 85% of venture capital firms were found to be active or very active in their level of involvement (Jog et al., 1991). No research studies relating to the time that venture capital firms spend managing their portfolio companies in Asia were found.

There are, theoretically strong arguments for and against a proposition for greater involvement of venture capital firms in their portfolio companies in Asia. Hall and Hofer (1990) have broadly classified culture as either monochronic or polychronic in nature. Polychronic people are committed to maintaining close long-term interpersonal relationships whereas monochronic people are accustomed to maintaining short-term interpersonal work relationships. They conclude that a cultural characteristic of Asians, in general, is to behave in a polychronic fashion⁴¹. Thus for an Asian portfolio company, once a personal relationship with the venture capitalist is established, frequent meetings and regular dialogue between parties may result in a greater involvement of the venture capital firm with the portfolio company. The portfolio company, in this case, may seek greater involvement since Asian managers, unlike the American managers, tend to increase dependence with time (Michael, 1997). Signals coming out of Asia also suggest that some of the venture capital firms are actively involved with their portfolio companies (AVCJ, 1999).

There are equally cogent reasons in Asia to suggest a possibility that venture capital firms may be less involved in their portfolio companies. An important feature of the Asian market is that families play a more prominent role in the economy (Gidoomal, 1997; Tahilia, 1997). Since most of the portfolio companies are family owned, issues concerning control and dilution are important. Families value their control over their businesses and the dilution of control over the business is more important than the dilution in equity (Stine, 1990; Chen, 1995). A venture

capitalist from Hong Kong has termed it as “Management obsession with an imperialistic sense of “control”⁴². Furthermore, family businesses are free of pressures for short-term profits (Bork et al., 1996) whereas venture capital firms have been known to press for short-term results (Gomez-Meija et al., 1990; Stier and Greenwood, 1995). The human resource, in a family business, also comes preferably from the family rather than from the best qualified potential contributors. Venture capital firms may not always agree to this arrangement and thus may be kept at arm’s length by the portfolio company. Asian entrepreneurs may not be accepting of an investors’ involvement since, traditionally, friends and acquaintances make equity investments but do not get actively involved in the business. Lastly, “Venture capitalists require a rate of return on their money that may not allow the investee to continue to operate and develop the business in the way, that, historically they have operated”⁴³. Under these scenarios the venture capital firm may be eyed with suspicion and the venture capital firm itself is likely to be careful in the matter of involvement. Some venture capitalists from Asia also believe that venture capital firms should restrict themselves to board meetings and inspection of monthly management accounts only.⁴⁴ Yet another argument against greater participation of venture capital firms in portfolio companies in Hong Kong and Singapore is the fact, that since venture capital is comparatively new in these countries, the venture capitalists have not accumulated the experience necessary for high levels of involvement in their portfolio companies. Since the accumulation of resources by a business depends a great deal on experience, there is a greater likelihood that venture capital firms will be less equipped to add to the resource pool of the portfolio company. The average size of

⁴¹ It needs to be pointed out that this classification is very broad and not entirely tenable since Asia comprises many diverse cultures.

⁴² Personal correspondence: Comments by a venture capitalist from Hong Kong (Identity kept confidential on request) April 2, 2000

⁴³ Personal Correspondence: Comments by a Senior Solicitor specialising in venture capital from Singapore (Identity kept confidential on request), April 7, 1999

investment in both these countries is also smaller compared to the average size of the venture capital investment in the United States⁴⁵. Thus, venture capital firms in the United States may find more allocation of time financially viable. After considering both sides of the argument it is proposed that venture capital firms in Hong Kong and Singapore will be less involved in the affairs of the portfolio company compared to their American counterparts.

Proposition 1: Venture capital firms allocate less time to managing portfolio companies in Hong Kong and Singapore than in the United States.

5.2.2 The nature of Involvement

Gorman and Sahlman (1986), in a pioneering research work relating to the kind of activities in which venture capital firms are involved, found that venture capital firms contribute to the portfolio companies in the area of financing, strategic and operational planning, management recruiting and providing a network of contacts. MacMillan et al. (1988) built on Gorman and Sahlman's work and identified 20 activities in their study. The top six activities were;

- 1) serving as sounding board to entrepreneur team;
- 2) obtaining alternative sources of equity financing;
- 3) interfacing with the Investor group;
- 4) monitoring financial performance;
- 5) monitoring operational performance; and

⁴⁴ Personal Correspondence: Nicholas Ashby, Managing Director, Global Alliance Capital (Malaysia) Sdn. Bhd. Malaysia, April 5, 1999.

⁴⁵ AVCJ (1999), Elango et al. (1995).

6) obtaining alternative sources of equity financing.

An important area of strategic and functional management was found missing among the top areas of involvement. MacMillan et al. (1988) argued that either the venture capitalist did not feel that involvement in strategic and functional areas was important or that due to the continual nature of involvement in these activities, the venture capitalist may not have been able to devote substantial time to them. They also suggested that the low involvement in these activities was the result of the amount of hands on participation entailed. They also speculated that the role of a sounding board member, which was rated highest, might include acting as confidant or mentor. Following Gorman and Sahlman (1986), they did not ask venture capital firms to rate such roles. Rosenstein et al. (1989) adapted the survey instrument of MacMillan et al. (1988) and gathered data, from 162 CEOs of portfolio companies, about the areas of the venture capital firms' involvement. They found that CEOs ranked the five most important areas of the venture capital firms' involvement as being a sounding board to the management team, interfacing with the investor group, monitoring the operating performance, monitoring the financial performance and recruitment/replacement of the CEO. A comparison of the studies conducted by MacMillan (1988) and Rosenstien (1989) indicates that venture capital firms and portfolio companies tend to generally agree on the areas where venture capital firms become involved with their portfolio companies. Sapienza and Timmons (1989) had similar results with the matched responses of CEOs of venture capital backed ventures and lead venture capital firms. A survey in Sweden observed different styles of venture involvement and classified these as consultancy oriented, mentor oriented, operation oriented and structure oriented (Landstrom, 1991). In the United Kingdom, venture capital firms are valued by their portfolio companies on the basis of being a sounding board for ideas, challenging the status quo, financial advice, guidance on strategic

matters and their contacts and market information (BVCA, 1998). Thus the European and American studies found similar results.

A survey conducted by Pandey and Jung (1996), in Taiwan, found that ranked by importance, venture capital firms are involved in managerial assistance, in financing policy and strategy, developing the product or service, internal management of the firm, launching the product or service in the market and technology induction. A case study conducted by Pandey (1998), undertaken in India, found that a Government owned venture capital firm was involved in providing managerial assistance and support, monitoring and follow-up of assisted ventures and arrangement of IPO. Thus, research studies in Asia, although few, generally point toward activities that are similar to the involvement activities of venture capital firms in the United States or Europe, but with a different emphasis. However, since these two studies are limited to only two countries, they may not truly reflect an overall picture of the Asian market. Moreover, both these markets are markedly different in terms of venture capital market size and stage of development. The first study conducted by Pandey and Jung (1996) in Taiwan was focused on the difference in perception of both venture capital firms and portfolio companies and did not attempt to compare the results with previous research findings elsewhere. The research case study in India, by Pandey (1998), pertained to only one venture capital firm owned by the Government of India. As government owned venture capital firms constitute a very small part of the Asian venture capital market (AVCJ, 1999) the result cannot be assumed to mirror the behaviours of the entire unit. Consequently, Pandey's findings cannot be generalised.

While there is a possibility that venture capital firms in Asia may be involved in similar activities throughout Asia, the same cannot be said about the importance that is attached to these activities by either the venture capital firms or the portfolio companies. There is some evidence that

cultural factors do affect the kind of activities that venture capital firms are involved in (Pandey and Jung, 1996). However, most of the previous research tends to agree on the areas of venture capital firms' involvement and there is, so far, little evidence of a major deviation in these activities in other countries. Therefore, it is proposed that there will be no deviation in involvement activities undertaken by venture capital firms in Singapore and Hong Kong as compared to those in the United States.

Proposition 2: Venture capital firms in Singapore and Hong Kong are involved in similar activities with their portfolio companies as venture capital firms in the United States.

As far as the ranking of activities according to their importance is concerned, it has been found that the portfolio companies and the venture capital firms assign different ratings to different value added activities. In Finland, the activities of financing and active oversight are rated most important (Ahdekivi, 1990). In Sweden one survey observed that entrepreneurs rate access to capital, the venture capitalist's competence, moral support and networks of prime importance (Frederikson, 1990). As already stated, in Taiwan portfolio companies rated establishing management systems, providing management recruitment/training, assistance to explore new technologies, providing market channels, market planning and establishing accounting systems as among the more important activities undertaken by venture capitalists (Pandey and Jung, 1996). In the United States, MacMillan et al. (1988) found that the importance of activities varies with performance and high levels of some activities (e.g. negotiation of employment terms) were associated with high performance, whereas high levels of other activities, such as recruiting top management, were associated with poor performance. Although, seemingly, there is some difference in the importance that is attached to any activity, there has been little attempt in the past to compare these activities across countries and to find out whether these differences are

significant. On the basis of the second proposition suggesting similarities in activities, it is further proposed that rankings of the importance of the activities in which venture capital firms are involved with their portfolio companies in Hong Kong, Singapore and the United States, will be similar.

Proposition 3: The importance of value added activities attributed to venture capital firms display similar patterns in Singapore, Hong Kong and the United States.

5.2.3 Value-added and the venture capital firm

MacMillan et al. (1988) found that venture capital firms included in their study were generally quite satisfied with their involvement with portfolio companies. However, their observation, that both positive and negative correlations existed between involvement measures and venture performance made the commonly accepted link between value addition and venture performance rather controversial.

One of the earliest studies taking up the value added question was by Rosenstein et al. (1989)⁴⁶. They found that although entrepreneurs ranked the venture capital firm's contribution particularly useful in the early stages of the portfolio company's life cycle, overall, entrepreneurs did not perceive that venture capitalists on their boards added more value than did other board members. They concluded by surmising that the value added depends on the type of activity undertaken. In a follow-up study, Rosenstein et al. (1993) interviewed CEOs about the involvement of venture capital firms on their board of directors. They found that CEOs rated the contribution of venture capitalists more highly than the contribution of outside investors if one of the top 20 venture capital firms was represented on the Board of Directors. Sapienza and Timmons (1989) found that the portfolio company's assessment of the venture capital firm's

involvement depended on various factors like the stage of development attained by the business, experience of the entrepreneur and the stake of the venture capital firm in the portfolio company. The follow-up study (Sapeinza, 1992), based on a survey of 51 pairs of venture capital firms and portfolio companies and using personal interviews, confirmed that the value attributed to venture capital firm's involvement varied with circumstances. The study concluded that since venture capital firms do add value, choosing the right venture capital firm for the portfolio company at the outset was important. Gomez-Mejia et al. (1990) used a qualitative research approach and conducted interviews of 20 venture capitalists and entrepreneurs in the United States. They expressed mixed views regarding the value of the managerial involvement of venture capital firms.

A few studies of European venture capital firms parallel the studies undertaken in the United States and provide insights into the roles that venture capital firms play. Using the MacMillan et al. (1988) framework, Harrison and Mason (1992) found that entrepreneurs in the United Kingdom rated acting as a sounding board and strategic activities as the two most important contributions of venture capital firms. They also admitted that they depended more on the assistance of the venture capital firm than they did on other types of investors. A British Venture Capital Association Survey (1992) concluded that, prior to investment, entrepreneurs expressed a preference for passive financial assistance only, but, post investment they rated active non-financial assistance as providing the highest value added. According to Van Wakeren et al. (1989), who have done their research in the Netherlands, about 60% of entrepreneurs admitted receiving important strategic assistance from venture capital firms and about 20% received useful networking assistance. Exploring six successfully exited portfolio companies in the United

⁴⁶ Rosenstein himself had been studying the venture capital board (Rosenstein, 1988) and he, along with others, specifically applied value added questions to board members representing venture capital firms.

Kingdom, Murray (1996) found that, with one exception, all the portfolio companies questioned perceived appropriate and timely intervention by the venture capital investor as a critical element of success. Frederiksen et al. (1997) found a significant positive correlation between the level of influence held by the venture capital firm and the non-economic development⁴⁷ of the portfolio company. In a survey of entrepreneurs who have used venture capital finance in the United Kingdom, Colville (1991) found a high degree of satisfaction, with 95% of respondents prepared to recommend venture capital to a friend and almost two thirds subscribed to the belief that venture capital fund directors did add value to the company. However, there were concerns about the value of the post investment relationship. Only half the respondents considered fees to be good value and less than one third believed that venture capital fund directors contributed more than non-executive directors did. The promise of advice and ongoing support was ranked fifth by users as a choice criterion for the selection of venture capital firms. However, venture capitalists generally believe that they do add value. “A venture capitalist must be able to provide more than just financing. We tell our clients and encourage them to see other VCs [venture capitalists]... to see what they have to offer. All VCs [venture capitalists] offer \$ [money]... But what else sets them apart from others?”⁴⁸. However, so far, there is mixed evidence in the United States and Europe that entrepreneurs see venture capitalist as adding value. Research results also seem to vary across different countries.

Little research, explaining the value added question, has been conducted in Asia. In Asia, because of the family oriented nature of the businesses, entrepreneurs may be averse to the interference of the venture capitalist and may even see the absence of value added where it does exist. The American style of institutionalised venture capital industry and consequent value added incentives

⁴⁷ In the area of motivation, job satisfaction and networking as opposed to turnover, profitability, liquidity etc.

⁴⁸ Personal correspondence: Godwin Pon, Investment Manager, Agri-Food Equity Fund, Canada, April 4, 2001.

for venture capital firms may not sit well, for now, with Asian entrepreneurs simply because they are not used to this level of institutionalisation or may not appreciate the goals of venture capital firms as such. Another reason why venture capital firms may not be able to add value to their portfolio companies is the comparative lack of experience in venture capital and the consequent comparative deficiency of resources that it can pass on to its portfolio company.

Despite their recent development many of the venture capitalists operating in Asian venture capital firms either have experience of the American/European market or learned the ropes in these markets. Asian businesses can learn from these venture capital firms and are likely to see them as adding more value to the business. Correspondence with venture capitalists revealed that venture capitalists, at least, do believe in value added involvement. “If the VC[venture capitalists] does not add value, why does it expect itself to make money?”⁴⁹

Proposition 4: Venture capital firms in Singapore and Hong Kong see themselves as adding value to the business through their involvement.

5.2.4 Addition of value in the context of resource exchange

As already argued, it is difficult to identify any resource singly or in combination, which accounts for a firm’s success. Hindsight or ex-post examination of factors contributing to success biases the conclusions (Foss et al., 1995). In order to avoid ex-post explanations, those resources (activities) in which venture capital firms have been known to participate are the only factors examined in this thesis.

The next proposition is derived from the research model (Figure 4.3) presented in Chapter 4. As argued, the primary requirement of a value-added relationship is the willingness (intentionality) of

⁴⁹ Personal correspondence: Comments by a venture capitalist from Hong Kong (Identity kept confidential on request) August 23, 2000

both the parties to interact and agree to a resource exchange relationship. In order to test the importance of willingness of both the parties in a value-added model it is important to analyse factors which can affect willingness of both the parties to interact.

As noted in chapter 4, MacMillan et al. (1988) found that the degree of involvement of a venture capital firm in the affairs of a portfolio company was a matter of choice, which in turn is governed primarily by the firm's policy. Conversely, Lerner (1995) found that a venture capital firm is more likely to be involved where it perceives a need for oversight. Thus, beside choice, there are other factors that can influence levels of involvement that are governed by circumstances other than choice.

A venture capital firm has to manage many projects and the venture capitalist has to learn to divide time between investments. Moreover, time needs to be allocated to the search for new projects and to evaluate investment proposals. Any involvement in portfolio companies, therefore, is also dependent on the demand that other activities put on the time available. The degree of involvement may also depend on the venture capital culture of the subject country/region (Hofstede, 1984; Jeng and Wells, 2000). It has also been found that venture capital firms are more involved in portfolio companies in which they have a relatively higher equity stake (Gomez-Mejia et al., 1990); whether in terms of their ownership proportion, the size of their investment or the proportion of their capital under management invested in that portfolio company. Finally, the investment role is a factor in venture capital involvement since it has been determined that lead venture capital firms are more involved with their portfolio companies (Gorman and Sahlman, 1986).

It is argued that the willingness of the venture capital firm to interact with the portfolio company must be matched with an independent consent by the portfolio company. This consent is

important because a portfolio company's unwillingness to interact will not only hinder involvement but can damage the whole relationship (Williamson, 1975). Gomez-Meija et al. (1990) showed that entrepreneurs' reactions differ regarding the managerial involvement of venture capital firms in portfolio companies and many CEOs view it as counterproductive.

The overwhelming consideration for the entrepreneur is the loss of authority and control within the portfolio company. The entrepreneur will tend to avoid venture capital firms' involvement unless factors exist which constrain his or her choice. Depending upon the availability of a particular resource from a venture capital firm, the entrepreneur will be less hostile about involvement if that particular resource is of critical importance to the success of the venture. Similarly if the required resource is available from other sources the entrepreneur will have less incentive to interact with the venture capital firm. Moreover, like the venture capital firm, the portfolio company will be affected by the region's venture capital culture⁵⁰.

Proposition 5: The venture capitalist's perception of their ability to add value will depend on the factors, which affect the willingness of both the parties to interact.

Proposition 5(a): The venture capitalist's perception of their ability to add value will also depend on their policy toward involvement.

Proposition 5(b): The venture capitalist's perception of their ability to add value will also depend on the extent of their financial commitment to the portfolio companies.

Proposition 5(c): The venture capitalist's perception of their ability to add value will also depend on venture capital industry culture in which a venture capital firm operates.

According to the resource exchange model (Figure 4.3) the second primary requirement of an exchange relationship is the resource configuration of both the parties. The resource pool of a venture capital firm should have the right mix to be able to provide a valuable contribution to the portfolio companies. Conversely the resource composition of the portfolio companies should be such as to absorb the contribution by the venture capital firms. As explained in Chapter 4, resource composition (need vs availability) is only a matter of perception. The following two sets of proposition analyses possible factors which may affect the way venture capitalists see the configuration of portfolio companies' resources and their own. Akin to the idea of need/availability is the right match between them as explained in Chapter 4.

The way venture capitalists will look at the resource configuration of a portfolio company depends on several factors. Almost all of these factors have been linked to value added in previous research studies. The business growth literature in general divides businesses, including those involving venture capital investment, in terms of sequential stages (Miller and Frieser, 1983; Churchill and Lewis, 1983; Garvin, 1983; Ruhnka and Young, 1987). Each stage has different financial needs and risk-reward options (Porter, 1986; Rubel, 1977; Henderson, 1986; Mashman and Schlank, 1987). New businesses are subject to higher risks (Porter, 1980; Tobias, 1982; Bygrave, 1989) and the greatest risk is associated with the least developed venture (Callinan and Dimovski, 1985; Robinson, 1987; Ruhnka and Young, 1991). Bygrave (1987) has noted that co-investing among venture capital firms is greater for the earlier stages of development because of higher risks. Moreover Ruhnka and Young (1991) found that venture capital firms' demand for rate of return on investments was 73% and 55% at the seed and start-up stages and declined to 35% for late stage investments. The risk in the early stage stems from the fact that the venture is new and requires a wide array of resources, including: information (data, technical knowledge,

⁵⁰ Since this study only examines perception of venture capital firms, the propositions have been restricted to venture capital firms.

political intelligence and expertise); physical and capital resources (funds, material, space and time) and symbolic support (endorsement, political backing, approval and legitimacy) (Kanter, 1983). There is thus serious need for the accumulation of resources for a new venture.

It is common for technology-oriented new ventures to attempt to use the development of products to get a foothold in the market (Timmons and Bygrave, 1986). Fast changing technology places heavy demands on the resources of new ventures (Sapienza and Amason 1993; Pisano 1993). Moreover, while the new venture team may be competent technologists they may lack in other skills (Gomez-Mejia et al., 1990). As the management team tries to grapple with commercial viability, they may find themselves lagging behind the operational demands of the business (Timmons and Bygrave, 1990). Consequently, the venture's need for resources is also greater when it is pursuing high technology.

Although Barney et al. (1996) found that venture capital performance was not related, ultimately, to the value added by venture capital firms, the presence of other factors like the nature and importance of the value-added activity needs to be discounted to arrive at a definite conclusion regarding a relationship between value-added and venture performance. They stated that their study was cross sectional and involved only one measure of performance⁵¹. Seemingly, there are good reasons why resource strength of a portfolio company should be rated on the basis of performance. Mintzberg (1973) observed that managers typically engage in varied and fragmented activities in part because interruptions occur frequently. The fact that others initiate many interruptions points to the fact that a manager's job is more reactive than pro-active. Since there are always more problems than the manager can handle, he/she is more likely to respond to a problem if there is pressure for immediate action (Yuki, 1989). Assuming that a venture

capitalist's role is similar, he/she is also more likely to concentrate on troublesome companies. As the performance of a portfolio company will depend ultimately on the resources that it is able to muster (Dierickx and Cool, 1989; Rumelt, 1984), if a firm is not performing well, it is more likely to be rated as short of resources by a venture capital firm.

Other factors likely to effect resource evaluation could be reputation and competency of the management team. According to the resource based theory a positive reputation is a valuable intangible asset that may allow a firm to establish a sustainable competitive advantage (Barney, 1991; Hall, 1992). Reputation also allows firms better access to scarce resources. Because firms also seek to reduce informational asymmetry and opportunism in exchange of resources, reputation is also likely to effect repeated inter-firm exchange relations (Granovetter, 1995; Williamson, 1991). Reputation can reflect on an alliance partner's characteristics (chapter 4, section 4.5.1) in the areas of management, product/service quality and financial position (Dollinger, Golden and Saxton, 1997). An entrepreneurial team with a positive reputation is assured to have a high level of self-sufficiency in resources (Saxton, 1997). Since competence has been found to relate to performance (Chandler, 1992), it follows that the perceived competency of the management team should also impart an impression of resource adequacy. Reputation here means a favourable track record of the management of the portfolio company (Vergin and Qoronfleh, 1998; Gompers and Lerner, 1999; Herbig et al., 1994) while competency means the ability to optimise resource usage.

Proposition 6 (a): At any given time the venture capitalist's perception of the resource needs of portfolio companies will depend upon the riskiness of the venture

⁵¹ Financial performance as measured by dividing the venture's total income by the number of employees at the time of first round financing.

Proposition 6 (b): At any given time the venture capitalist's perception of the resource needs of the portfolio companies will depend upon the performance of the venture.

Proposition 6 (c): At any given time the venture capitalist's perception of the resource needs of portfolio companies will depend upon the reputation of the management team.

Proposition 6 (d): At any given time the venture capitalist's perception of the resource needs of the portfolio companies will depend upon the competency of the portfolio company management team.

The same factors, which are likely to affect the venture capital firms' assessment of the resource strength of the portfolio company, can also affect the assessment of their own resource strength. However, meaningful measurements of some of these factors, in the case of a venture capital firm, require some adjustments. The basic problem arises while measuring risk. Since a venture capital firms' risk is primarily based on the composition of its portfolio, which in turn depends on the risk profile of the individual portfolio member, the overall riskiness of a venture capital firm is much more difficult to measure. Moreover, while venture capital firm may provide information on the risk profile of any of its individual ventures, it is unlikely to do so for the whole portfolio. Therefore, the risk factor of the venture capital firms has not been considered.

The reputation of venture capital firms also affects the value-added perception of portfolio companies (Rosenstein et al., 1993). Since this thesis is restricted to the perceptions of venture capital firms only, a question to venture capital firms on how they assess their own competency and reputation would have carried little validity. However, since the reputation of the venture capital firm is an important factor to be considered, it has been measured indirectly, as explained in chapter 7. The performance of a venture capital firm has been taken as a contributory factor in

overall reputation (Vergin and Qoronfleh, 1998). The performance of a venture capital firm is much more likely to attract new capital as well as quality proposals for funding which can result in an increase in the size of the venture capital firm (Gompers and Lerner, 1998). A larger size is more likely to result in a larger variety of the resource pool. The size of a venture capital firm, therefore, is also more likely to translate into the confidence with which a venture capital firm evaluates its own resources.

Competency has been replaced with experience since more experience tends to impart a feeling of professionalism and competency (Levinthal and March, 1993). Experience is especially important in the case of venture capital investment as “(n)ot only is it difficult to raise a new venture capital fund without a track record, but the skills needed for successful venture capital investing are difficult and time-consuming to acquire” (Gompers and Lerner, 1999, p.4). As a result of the venture capital firms’ previous investments in specific information about particular industries, industry experience is an important resource that can be useful to portfolio companies (Fiet, 1995).

Proposition 7 (a): The venture capitalist’s perception of his/her resource pool will depend upon the reputation of the venture capital firm

Proposition 7 (b): The venture capitalist’s perception of his/her resource pool will depend upon the size of the venture capital firm

Proposition 7 (c): The venture capitalist’s perception of his/her resource pool will depend upon the experience of the venture capital firm

There are good reasons for venture capital firms to add resources to the resource pool of their portfolio companies. Gomez and Meijia (1990) have argued that venture capital firms are

involved in their portfolio companies to the extent of their assessment of the chances for the success of the venture. As a venture's success, in large part, is dependent upon its resources, the contribution of resources by a venture capital firm will depend on its assessment of the resources possessed by the portfolio companies.

Venture capitalists believe that providing advice/support is a way of increasing the likelihood that the venture will succeed (Rock, 1991; Perry, 1988), thus their advice/support may ultimately affect the performance of the firm (Rock, 1991; Sapienza et al., 1995). The nature and extent of the venture capital firms' contribution is based on the needs of the new venture including gaps in managerial competence, the skills available from the investor and the relevance of specific advice and support (Warne, 1988). If venture capitalists believe that the resources possessed by portfolio companies are insufficient, they will make efforts to provide these from their own resource pool or assist portfolio companies in obtaining them from outside sources (Stier and Greenwood, 2000).

According to social exchange theory, the larger the amount of a resource possessed, the more likely it is to be passed on to others (Foa and Foa, 1980). Thus venture capital firms with larger resource pools are more likely to transfer resources to portfolio companies. Sapienza et al. (1995) have also noted that involvement will be more when venture capital firms appear to offer a significant resource for the venture.

While there seems to be sufficient incentive for venture capital firms to support their portfolio companies by adding to their resource pool, Sapienza (1994) has speculated that venture capital firms may put in greater efforts on portfolio companies that already have abundant resources and consequently a greater probability of success. This means that venture capital firms will be less inclined to add to the resource pool of a portfolio company which is not likely to succeed and

may start looking for a quick exit instead (Ruhnka et al., 1992). There has been, however, little research evidence to support this speculation.

Portfolio companies are in a position to accept or resist resource intake from venture capital firms. It is debatable whether portfolio companies will always welcome resource input by venture capital firms and there is some justification for the portfolio company not to acquire resources from the venture capital firm. As already stated, some entrepreneurs do believe that venture capital firms get in the way of a venture (Gomez-Meija et al., 1990; Stier and Greenwood, 1995). Venture capitalists themselves believe that potential clients perceive venture capital firms to be greedy, grasping or avaricious (Murray, 1991). Venture capital firms also concede that they sometimes provide incorrect advice (MacMillan et al., 1989). Moreover, entrepreneurs value their control over the portfolio company. Thus, despite a high regard for the resource strength of the venture capital firm, a portfolio company may systematically undervalue a venture capital firm's assistance because of a lack of trust, the possibility of a loss of control or reservations about the usefulness of a resource.

Conversely, there are also compelling reasons for portfolio companies to welcome resource transfer from the venture capital firm. Past studies on the success of high potential ventures have identified resources such as effective marketing, technological expertise (Maidique 1986), prior experience of the management team (Timmons et al., 1977), strategic decision making (Van de Ven et al., 1984) and strategic focus (Meyers and Roberts, 1986) as related to the success of the high potential ventures. It follows that portfolio company management, will be looking for a quick and optimal attainment of resources by building network exchange structures with outsiders that are identified as critical resource suppliers (Scherer, 1980; Larson, 1992). The smaller the firm's pool of resources, the more likely they are to be sought from resource

suppliers, including venture capital firms (Foa and Foa, 1989)⁵². Barney et al.'s (1996) finding can also be cited as a case in point whereby a less experienced venture team, of a new technology venture, assessed a venture capital firm's operational assistance higher than did the more experienced venture team. Lastly, it has also been argued that less able entrepreneurs (low resource pool) will choose to involve venture capital firms, whereas the more able entrepreneur (higher resource pool) will develop the venture without external participation (Amit et al. 1990). Research indicates that the venture capital firm's input is sometimes welcomed by portfolio companies (Bygrave, 1992; MacMillan et al., 1989; Rock, 1991) and there are even instances where portfolio companies have complained that their venture capital firms do not allocate enough time to the portfolio companies (Fried and Hisrich, 1994).

Bygrave and Timmons (1992) have indicated that sociological factors, like lack of personal chemistry and lack of open communication between the venture capitalist and the CEOs of the portfolio companies, may limit resource exchange. However, given the desire to succeed and a reasonable level of goal oriented behaviour, as would be expected from an entrepreneur (Weber, 1947), the resources possessed by the venture capital firm, despite poor personal relationships, may still be requisitioned and used by the portfolio company. More so because, this can be a critical leveraging opportunity whereby resources can be gained, and competitive advantage realised, without incurring direct capital investment (Larson, 1992).

There seem to be sufficient reasons why venture capital firms should transfer resources when they perceive the need and availability.

⁵² This argument is compatible with information processing theory (Galbraith, 1973) which implies that when information is potentially important to a company and it lacks information, or the resources to collect that information or an information processing capacity, it will seek and value greater interaction with other companies.

Proposition 8: Venture capital firms who rate the resources of the portfolio company lower will rate value added comparatively higher

Proposition 9: Venture capital firms who rate their own resources higher will rate value added as higher.

Researchers have emphasised compatibility between a venture capital firm and the portfolio company for a fruitful relationship. “The right match (between entrepreneur and the venture capitalist)⁵³ can yield a synergistic relationship that propels the firm to higher levels of excellence” (Ehrlich et al., 1994: p 81). This argument has been extended to the matching of resources and it is argued that the resource most likely to be exchanged will be the one that matches the requirements of the portfolio company.

It has been argued that the nearer the resources are to a similar specification as to requirement, the more likely they are to be exchanged (Foa and Foa, 1980). Knowledge specificity assumes an important dimension in the co-operative activity of entrepreneurs and venture capitalists (Cable and Shane, 1997). Sapienza et al. (1986) have also found that greater experience of a venture capital firm in the venture capital industry was not necessarily accompanied by greater interaction; but in cases where a venture capital firm was relatively more experienced in the portfolio company's industry, interaction was greater. Jeng and Wells (2000) also asserted that venture capital firms can greatly add to the success of the venture by providing a matching function as needed by the portfolio company.

There is, however, an interesting argument against resource matching and value maximisation. Wernfelt (1984) has referred to the close analogy of resource-based theory with product portfolio

⁵³ My parenthesis

theory. He argues that since strong products in a firm's growth-share matrix supply weak ones with cash, resources also support each other. This means that matching the needs of the portfolio company with the resource availability from the venture capital firm may not result in resource transfer because a portfolio company that does not want to interact may cover up weaknesses where the resources are needed by drawing on the extra resources it has in areas where it is resource rich. Also, for a resource needy portfolio company, the matching may not matter as it may help itself to whatever resource it can get from the venture capital firm.

It is proposed, on the basis of previous arguments, that such a matching is more likely to generate maximum value added. Thus a venture capital firm will try and add more to the resources where a gap is perceived and will participate less if no gap is perceived.

Proposition 10(a): Higher participation occurs in activities where, in terms of perceived resource strength, the venture capital firm is in a superior position compared to the portfolio company

Proposition 10(b): Lower participation occurs in activities where, in terms of perceived resource strength, the portfolio company is in a superior position compared to the venture capital firm

In the light of resource exchange theory and the existence of a network dyad relationship between the venture capital firm and the portfolio company, it is argued that value added is the result of resource exchange. Thus, resource perceptions play a very important role in building up a value added relationship. However, it has been demonstrated that value addition, as vague as this concept is, is also complicated by the existence of many factors that can significantly alter the benefits that can be derived from a fruitful relationship.

In the next chapter the methodology that has been adopted to collect data for the examination of the validity of the research propositions is discussed. An analysis of the characteristics of the participants who have chosen to respond to the research questionnaire is also undertaken.

6 Chapter 6: Research Methodology

6.1 Introduction

In this chapter the research plan, the actual research process and a justification of important parameters that are used in this thesis are presented. It also includes a discussion on the problem of the response rate in view of the closed nature of the venture capital business. In the last part of this chapter, the characteristics of venture capital firms that have responded to the questionnaire and the characteristics of portfolio companies that venture capital firms have chosen to report on, are presented with reference to the possibility of a response bias.

6.2 Research Design

A self-administered survey was utilised in this study. Surveys and interview techniques have been found to be feasible and productive here and in past studies relating to venture capital research (Brophy, 1986). This approach has been adopted because very little public data is available relating to the internal working of venture capital firms. Because of the very private nature of this business, it is rather difficult to gain access into venture capital firms. Because of the fact that venture capitalists, as highly specialised professionals, are extremely busy, it is equally difficult to gain a fixed interview time. Theoretically, venture capitalists should be much more willing to contribute time and effort to questionnaire based methods, which offer them flexibility in regard to time.

Another reason for using survey-based research in this study is that this work was carried out from Australia with subjects geographically dispersed around Asia. It would have been impractical to visit each potential respondent or to conduct lengthy interviews on the telephone. One advantage of a mail survey is that the survey instrument can be administered to a large

number of potential respondents in a short period of time in a relatively affordable manner. Moreover, since one of the objectives in undertaking this study is to make it comparable with the existing body of literature, the technique used by previous researchers was adopted. The survey was supported by e-mail exchanges with a number of venture capitalists inside and outside Asia. Selected comments from some of the venture capitalists, received via e-mails, are drawn upon wherever relevant in this thesis. Investor involvement activities at the post investment stage are examined in this study by focusing on the network dyad relationship that exists between the entrepreneur and the venture capital investor.

6.3 Survey Instrument

To ensure quality of the survey instrument a three-part approach was adopted. First, previous venture capital value added survey studies were reviewed in the light of resource exchange theory. The questionnaire was intentionally designed to be compatible with those used in the previous research studies, of similar nature, in order to facilitate comparison. Faculty members at the University of Wollongong, who had either experience in survey research or venture capital research were asked to examine the instruments and some modifications were made by incorporating their comments. Thirdly, the improved instrument was mailed to four friendly venture capital firms and then revised further, based on their observations.

The questionnaire was divided into three parts. The first part obtained basic information only. In the second part information was sought on the involvement question and followed a similar pattern to previous research. Lastly, information regarding resource exchange was sought. Appendix III is a copy of the actual survey instrument. The same survey instrument was sent to all countries. However, monetary values were expressed in terms of the local currency.

6.3.1 Main Issues in Survey Instrument

Investment funds were split according to type based on the AVCJ's *The Guide to Venture Capital in Asia 1999*. The AVCJ has been publishing the *Guide* for many years and its classification was found to be broad and close to the realities in Asian countries where multiple views of venture capital and different industry structures have to be taken into account. For the purpose of this research, the classification according to types is closely associated with the number of people working for the firms/companies and their experience. Some previous research studies (Gorman and Sahlman, 1989) refer to the number of partners and make further distinctions between different partners. Such an approach assumes the existence only of partnerships in the venture capital arena, which is not the case in Singapore and Hong Kong (Guan and Cheong, 1989).

Determining the experience that a firm/company has available as a resource is complicated by many different kinds of experiences that employees at all levels bring with them. Therefore, the questions were focused on senior management personnel only. While searching for the right terms to use, the approach of the AVCJ appeared to be pragmatic, in the Asian context, where it refers to the term "professionals" working for venture capital firms/companies. Although the AVCJ guide does not explain what it means by a professional, this term when applied to a venture capital market, broadly conveys the impression of someone with experience in venture capital working at a relatively senior level. The data on partners/senior management personnel/professionals gathered for this research study compares well with the AVCJ data on the number of professionals working for the firms/companies.

Companies who receive venture capital have been classified differently according to developmental stages. The European Venture Capital Association (*EVCA Yearbook, 1998*) does not classify "turnaround" as a separate development stage, unlike the Asian Venture Capital

Journal (Guide to Venture Capital in Asia, 1999). Similarly, *Pratt's Guide to Venture Capital Sources* published in the United States (*Venture Economics*, 1989) mentions rounds of financing in its company classification. Researchers have adopted numerous different classifications for portfolio company stages of development (Elango et al., 1995). The classification followed by Cornelius (1986) was found to be useful as it not only provides a comprehensive list of possible developmental stages but also explains the meanings of the terminology used⁵⁴. Data contained in *The Guide to Venture Capital in Asia* published by AVCJ was analysed. The respondents in each country were sent questionnaires expressed in their own currencies based on the exchange rates prevailing on January 25, 1999.

6.3.1.1 Involvement

As mentioned in Chapter 3, the extent of venture capitalist's involvement in a portfolio company has multiple dimensions. To confirm the results, the extent of involvement is taken in this thesis to include an investigation of the number of activities that the venture capital firm is involved in with its portfolio company; the frequency of interaction and the amount of time spent by the venture capital firm managing the affairs of its portfolio company (measured in hours per month). Following previous research, only the role of the lead investor has been considered. In order to make the study comparable (Macmillan et al., 1988, Rosenstein et al., 1989, Ehrlich et al., 1994), the venture capital firm's participation has been measured on a Likert scale. The research process began with a list of 20 activities already identified by MacMillan et al. (1998). To make the list more comprehensive, some of the activities were rephrased and then re-classified in the light of previous research regarding the involvement of venture capital firms in their portfolio companies (Rosenstein et al., 1989; Sapienza and Timmons, 1989; Stier and Greenwood, 1995).

⁵⁴ Seed is the research and planning stage, start-up means the market entry stage, early expansion is the market development stage, late expansion is where a venture is ready to exploit the market and mezzanine funding is taken to mean the stage at which a venture is ready to go public. Public company, leveraged buyouts and turnarounds are self-explanatory classifications.

Representation as a board member has not been included in the final list of activities because the contribution by the venture capital firm's representative on the Board of Directors can be identified from other activities. After this exercise, a list of 15 activities remained. The same approach as Gorman et al. (1986) and Elango et al. (1995), regarding the determination of time spent by the venture capitalist with the portfolio company, was adopted.

Respondents were asked to report on the time that they had spent in direct contact with their portfolio company. Direct contact includes three factors; the time the venture capitalists spent on the telephone in conversation with representatives of the portfolio company; attending formal meetings; and attending informal meetings. In order to arrive at the total direct contact time the number of meetings in a year was multiplied by the average hours spent. This was added to the number of telephone calls multiplied by the time per call. It should be noted that this measure does not include the time that venture capitalists spend on work that is not in direct contact (e.g. reading reports, devising strategies privately, contacting others on behalf of portfolio company etc). The final result, therefore, is indicative and should not be construed as the total time spent on managing a typical portfolio company

6.3.1.2 Resources

As mentioned earlier, there are number of ways to classify resources. The researcher has relied upon previous studies as the starting point to determine resources to be used. As mentioned in Chapter 3, the resource-based theory has been criticised for being tautological in the sense that resources are labelled as useful only after they have been identified as contributing to the firm's success. In order to avoid the determination of the usefulness of resources after the fact, the involvement activities already identified in previous research studies (MacMillan et al., 1988; Gorman and Sahlman, 1989; Rosenstein et al., 1989; Ehrlich et al., 1994) were converted into

identifiable resources. Activities, in some cases, could be identified as a resource. For example, crisis management as an activity is also a resource. In cases where the activities were too narrowly defined, a broader term used in the above mentioned research studies were used to identify that activity. For example, the ability to contribute by negotiating a contract with a prospective employment candidate, for its portfolio company, primarily stems from the expertise in the area of personnel management. The resource and activity classifications, as shown in Table 6.1, agree with the factor analysis performed by Macmillan et al. (1988) to classify these activities. Some of the activities, however, do overlap and originate from multiple resources. In this case, the resource has been split into primary and secondary resource. Since experience and industry knowledge affect all activities, they have been measured but not included. A detailed link between resource based capabilities and the identified activity has been considered as follows: As mentioned in Chapter 3, there is little consensus among researchers regarding the value-added contribution of venture capital firms. Value-added seems to be a complex issue because numerous factors in multiple combinations affect the ultimate value added in varying degrees. The list of possible factors can be very long. It was believed that any attempt to measure all these factors may result in a serious shortfall in the response rate, which already has a dismal record as evidenced by past research in venture capital in general and in Asia in particular. Factors, which are related to venture capital firm/portfolio company characteristics and the research exchange paradigm were identified since partner characteristics and resources form the basis of the resource exchange model. To narrow down the list, only those factors were selected which have been identified with value-added in previous research studies.

6.1 Involvement Activities and Resources		
Activity	Resource/Capability Primary	Resource/Capability Secondary
Personnel Search	Number of Contacts-PC Industries	Number of Contacts-Other Industries
Interview and Selection	Personnel Management	Personnel Management
Personnel Replacement		
Personnel Motivation		
Negotiation of Terms with Prospective Candidate		
Development of Professional Support Group	Number of Contacts-Other Industries	Number of Contacts-Other Industries
Formulation of Initial Business Strategy	Strategic Planning,	Project/idea Evaluation
Ongoing Strategy Development		
Management of Crises	Crises Management	Crises Management
Development of Production Techniques	Operational Planning	Project/idea Evaluation
Selection of Vendors and Equipment	Operational Planning	Operational Planning
Interfacing with Investor Group	Financial Expertise	Number of Contacts-Financial Institution
Obtaining Alternative Resources of Debt Finance	Number of Contacts-Financial Institution	Financial Expertise
Obtaining Alternative Resources of Equity Finance		
Monitoring Performance	Monitoring Performance	Monitoring Performance

6.4 Plan of the Study

The Australian venture capital market started out as the favourite for this study. However, the idea was later dropped for many reasons. The Australian venture capital market is not only smaller in size, but is also not as well developed as the venture capital markets in some neighbouring countries. With a record of a low response rate from venture capital firms, an empirical research project in Australia would have rendered the research result untenable. Some venture capital firms in Australia were contacted but the lukewarm response made clear the futility of this exercise. Singapore appeared to be a good choice for this study. Singapore not only has a fairly well developed venture capital market but, because of its open market policy houses a variety of venture capital firms from all over the world. The proximity to Australia, as compared to other Asian countries, was also an advantage making this exercise less expensive.

After some preliminary investigation, it was decided to expand the focus of research to more Asian countries. Since the Japanese venture capital market is unique (Clark, 1987), the next four largest Asian venture capital markets were selected for this study. These included Hong Kong, Singapore, South Korea and Taiwan. The first point of contact was the respective Venture Capital Associations in Asia. No response was received from any of these after one letter followed by two reminders. The reason, it was realised later, is not difficult to understand. [“Most of these very VC(venture capital) associations have acted as nothing more than lunch clubs and have not really done any research to my knowledge. Most of them don't even have permanent offices and the current chairman's secretary is in most cases the administrator. I think the best way is to have a well-funded pan-Asian venture capital association in the mould of EVCA. Who will do that remains up there.”]⁵⁵. An Internet search for Asian venture capital firms did not produce the desired results either because in early 1999, not many Asian venture capital firms had a website or information about themselves available on the web.

The AVCJ publishes a very useful listing of venture capital firms operating in Asia. It also includes very useful data. The information contained in *The Guide to Venture Capital in Asia* with particular focus on venture capital firms was the primary reason an Asian based research was selected.

6.5 Response rate problem

The response rate in this kind of study poses the biggest threat to the validity of the research. The response to questionnaire-based research depends primarily on the willingness of people to respond to the questionnaires. While a 100% response rate is unlikely, it is entirely up to respondents to decide whether or not to respond. The response rate (RR) assumes enormous

⁵⁵ Personal correspondence: Allen Lee, Associate Editor, Asian Venture Capital Journal, September 1, 1999.

importance here since a result based on a high response rate from a wide representation of the whole population under study is generally perceived as dependable, valid, and reliable. It is unclear, however, how high the response rate needs to be (Baruch, 1999). While studies have been done on the variables that affect the level of response (Heberlein & Baumgartner, 1978; Kelsall, Poole, & Kuhn, 1972), there is no agreed norm as to what is or what may be considered an acceptable and reasonable response rate. Henderson (1990) has argued that a response rate of 20-30% is fairly typical for mail-out surveys to a large sample of firms. Organisational representatives may decline to respond due to a variety of reasons. Fenton-O'Creevy (1996) examined reasons for non-response in a study that had yielded a 33% response rate at the organisational level. A random sample of non-respondents reported various reasons for not responding. For example, too busy (28%), not considered relevant (14%), address unavailable to return the questionnaire (12%), and cases where it was company policy not to complete surveys (22%). The remaining 24% did not state clear reasons for not responding. Even in the case of questionnaires returned, the issue of difference between returned and useable questionnaires needs to be ironed out. Baruch (1999) argues that there should be a distinction between studies directed toward top management (CEO/MD etc.) or official representatives of organisations, and others such as mid-level managers. For the former the norm may then be 36 +/- 13 responses out of 100 whereas for most other populations it may be about 60 +/- 20 responses out of 100 (Baruch, 1999).

Empirical evidence about venture capital is not easy to develop because of the private/confidential nature of venture capital firms and their investments (Barry, 1994). The primary source of empirical evidence in venture capital has been the use of survey instruments, in which case, response rate turns into a major issue. To determine the past levels of response rate from venture capital firms, 24 research studies that used a mailed questionnaire and targeted

either the venture capital firms or their portfolio companies were examined. The response rate from venture capital firms in the United States presents a wide variation from 30% or less (MacMillan et al., 1988; Bruton et al., 1997; Carter et al., 1994; Elango et al., 1995; Barney et al., 1996; Sapienza et al., 1996) to 50% or more (Gorman and Sahlman, 1986; Ehrlich et al., 1994; Fiet, 1995; Sapienza, 1992). Interestingly, MacMillan et al. (1988) and Sapeinza (1992) explored a similar question, of the nature of venture capital firms' involvement with their portfolio companies, with a considerably different response rate. Sapienza's (1992) study, however, with a response rate of 80% for the venture capital firms and 85% for the portfolio companies, was an exception. The usual response rate of portfolio companies in such studies present a more consistent pattern of 20-30% (Barney et al., 1989; Rosenstein, 1989). Unfortunately, many studies do not cite the reasons for the wide variations in return rate. Only two studies have specifically acknowledged using Dillman's (1978)⁵⁶ approach and both have ended with a comparatively modest response rate of below 30% (Bruton et al., 1997, Barney et al., 1996). The response rate of venture capital firms does not seem to follow any particular pattern over time in the United States.

No one appears to have conducted research on venture capital firm/portfolio company relationship in Asia. Of the two studies of venture capital in Singapore, that were accessible, the response rate was abysmal (Ray, 1991; Ray 1994). In the later study, where this information was provided, it took the intervention of a powerful government official to lift the response rate from 2% to 7% (Ray, 1994). The same researcher, in collaboration with others, had earlier obtained a much better response from Japan of 25.7% (Ray et al., 1993) as have others in other parts of Asia (Chotigeat et al., 1994; Rah et al., 1994; Pandey and Jung, 1996). Despite the fact that Hong

⁵⁶ Dillman (1978) has outlined the procedure to increase response rates in his book "Mail and Telephone Surveys: The Total Design Method". Dillman's approach is primarily based on a series of specifically timed mailings including an initial mailing

Kong is one of the largest venture capital markets in Asia, there is a serious dearth of research studies there and previous response rates could not be assessed.

It was expected that the response rate of this study would be governed by the following factors;

- 1) Traditionally, venture capital firms have been found to be reluctant to disseminate information even for academic purposes (Boylan, 1982; Bygrave, 1989);
- 2) Businesses in the targeted countries, especially in Singapore are inundated with questionnaires commissioned by governments and local academics. After a while this creates a jaded reaction to the nth questionnaire (Ray, 1994);
- 3) Absence from the workplace due to an overseas assignment, a long holiday, or other long-term absence could prevent otherwise willing respondents from participating in this study;
- 4) Venture capital firm's offices may have changed, personnel being replaced or the respondents may not have received the questionnaire; and
- 5) Potential respondents may have permanently or temporarily ceased involvement in venture capital.

6.6 The Survey

Since the response rate was considered to be particularly sensitive, the survey approach recommended by Dillman (1978) was adopted. The survey instrument was dispatched at the end of June 1999. A total of 334 questionnaires were sent to four different countries.

6.2 Survey Response

	Singapore	Hong Kong	Taiwan	S. Korea	Total
No. of Questionnaires Sent	83	150	43	58	334
Not Involved at the Moment	1	0	0	0	1
Returned Undelivered	7	11	4	7	29
Same Company as Other	1	0	0	0	1
Not a VC Company	0	6	1	2	9
Not Interested	1	2	0	0	3
No Response	49	116	38	49	252
Response Received	24	15	0	0	39

The addresses of the venture capital firms were taken from the AVCJ and *The Guide to Venture Capital in Asia*, 1999. The letters were sent to the venture capital firms during late June and the early part of July 1999. A reminder, enclosing the questionnaire again, in the middle of July 1999 followed this. Later, two fax reminders were sent at the end of July with a one-week gap between each reminder. As expected and despite all precautions, the response rate in all cases was low. Unfortunately, in many cases, the venture capital firms did not even acknowledge the receipt of correspondence and fax reminders. The most responses came from Singapore, numbering 24 and a response rate of approximately 33%, followed by Hong Kong, with 15 and a response rate of 11%. No response was received from either S. Korea or Taiwan. It was decided to drop S. Korea and Taiwan and proceed with the responses received. Putting together both Singapore and Hong Kong yields a response rate of approximately 20% which, considering past research in venture capital, was considered acceptable.

Interestingly, the majority of venture capitalists who responded to the questionnaire actually filled up the survey instrument. As a large number of respondents did not respond to the questionnaire or even acknowledged receipt of the questionnaire, despite reminders, it was not possible to find

out the reasons for non-response. Thus not enough data was available to perform a non-response analysis

6.7 Sample Characteristics & Response Bias

6.7.1 Respondent Profile

The responding firms represent a broad cross section of industries by preference⁵⁷ and provide little evidence of response bias toward any industry.

6.3 Average Amount of Capital Under Management

	Frequency	Percent	Valid Percent	Cumulative Percent
Less than US\$30 Million	7	17.9	17.9	17.9
Between US\$30 m-60 m	10	25.6	25.6	43.6
Between US\$60 m-90m	4	10.3	10.3	53.8
Between US\$90m-120m	4	10.3	10.3	64.1
More than US\$150m	14	35.9	35.9	100.0
Total	39	100.0	100.0	

The data from Singapore and Hong Kong indicated considerable diversity regarding size. The AVCJ study had the same result with a similar average capital under management of USD 94 million (AVCJ, 1999). There is an indication that there are fewer mid-sized venture capital firms with venture capital under management of USD60 million to USD120 million. The size spread does not indicate an optimum size for the firms.

6.4 Type of Investment Fund

	Singapore		Hong Kong	
	Frequency	Percent	Frequency	Percent
Government Sponsored	3	12.5		
Corporate Subsidiary	3	12.5	3	20.0
Subsidiary of a Financial Institution	6	25.0	4	26.7
Subsidiary of a Securities Firm	1	4.2		
Independent Company/Partnership	9	37.5	8	53.3
A Joint Venture Company	2	8.3		
Total	24	100.0	15	100.0

⁵⁷ This information was not a part of the research questionnaire. However, AVCJ provides similar information about all venture capital firms operating in Asia. The information relating to venture capital firms who have responded to this survey was compiled from AVCJ data.

The respondents involved almost all types of funds. However, in both countries, more responses came from Independent firms/companies and subsidiaries of financial institutions and corporations.

A comparison of the AVCJ data according to types of firms in Singapore and Hong Kong compares well with the research data.

6.5 Venture Capital Firms by Types

	Singapore(AVCJ, 1999)		Hong Kong (AVCJ, 1999)		Singapore & Hong Kong(AVCJ, 1999)		Research Data (Singapore & Hong Kong)	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Bank Subsidiary	10	16.67%	16	20.25%	26	18.71%	10	25.64%
Corporate Subsidiary	8	13.33%	11	13.92%	19	13.67%	6	15.38%
Other Subsidiaries	2	3.33%	9	11.39%	11	7.91%	1	2.56%
Others	5	8.33%	3	3.80%	8	5.76%	2	5.13%
Government Owned	6	10.00%	0	0.00%	6	4.32%	3	7.69%
Independent	26	43.33%	40	50.63%	66	47.48%	17	43.59%
Merchant Bank	3	5.00%	0	0.00%	3	2.16%	0	0.00%
Total	60	100.00%	79	100.00%	139	100.00%	39	100.00%
						%		

In both these countries more than 40% of the firms are captives and an equal percentage are independent firms. The importance of the captive and semi captive structure of venture capital firms, as in Europe (EVCA, 1998), points toward a possibility of influence of a corporate-venture-capital-type governance structure in these countries. Government owned companies comprise 7%, which though more than 4% reported in Europe, is not exceedingly different. Since Governments in these countries have played an active part in promoting venture capital, there is thus some evidence that this has occurred through incentives and legislation rather than active participation.

6.6 Experience (Both Countries)

	N	Minimum	Maximum	Mean	Std. Deviation
Years Firm has been in Venture Capital	39	1.00	29.00	6.6154	5.3095
Number of Professionals	39	2	25	6.36	5.24
Avg. years of Experience-VC Industry	39	3.00	15.50	7.3667	2.7623
Avg. Experience Other Industries	39	.00	16.00	8.9231	3.7407
Valid N (listwise)	39				

Singapore

	N	Minimum	Maximum	Mean	Std. Deviation
Years Firm has been in Venture Capital Business	24	1.00	18.00	6.6667	4.3003
Number of Professionals	24	2	25	6.75	6.19
Avg. years of Experience-VC Industry	24	3.00	15.50	7.4083	2.8087
Avg. Experience Other Industries	24	2.00	16.00	9.4167	3.8634
Valid N (listwise)	24				

Hong Kong

	N	Minimum	Maximum	Mean	Std. Deviation
Years Firm has been in Venture Capital Business	15	1.00	29.00	6.5333	6.7915
Number of Professionals	15	2	14	5.73	3.31
Avg. years of Experience-VC Industry	15	4.50	12.00	7.3000	2.7826
Avg. Experience Other Industries	15	.00	13.00	8.1333	3.5176
Valid N (listwise)	15				

The AVCJ has provided information relating to the age of 163 venture capital firms in Singapore and Hong Kong. A two tailed z test ($z=1.35$) was performed to compare the mean age of venture capital firms at a 95% confidence level without discovering a significant difference between the AVCJ data and the data collected by this study. The mean age of the venture capital firms/companies in the sample was 6.5 years which compares well with the average age of all venture capital firm/companies as reported by AVCJ of 4.8 years in Singapore and Hong Kong. The oldest firm in the respondent sample claimed 29 years of operation and only 4 companies/firms were less than three years old.

The average number of professionals working in respondent companies/firms was 6.36 with a high of 25. About 80% of the respondents had less than 7 professionals working for them. The average number of professionals in responding companies/firms is slightly more than the average of 5 professionals for all Asia (AVCJ, 1999) but compares well with the overall average of slightly

more than 5 for Hong Kong and a little more than 6 for Singapore reported by the AVCJ (1999). The average experience in venture capital, of the professionals working for respondent companies/firms is 7 years, which is one year greater than their experience in other industries. It is interesting to note that the average reported experience of the professionals in the venture capital industry was more than the average age of the venture capital firms/companies. This is in contrast to Gorman and Sahlman's (1989) research study in the United States where the average experience of the venture capitalists was almost half the age of the firm/company. If this data is considered indicative of the industry in general, it points toward a possibility that most of the venture capitalists working in Singapore and Hong Kong have gained their experience elsewhere. In terms of statistics regarding experience, there is not much difference between Hong Kong and Singapore.

6.7 Number of Professionals

Number of Investments at Present	Mean	Std. Deviation
Less than 5	4.13	2.47
Between 6-10	4.75	2.75
Between 11-15	4.67	1.75
Between 16-20	6.63	6.91
More than 25	10.33	7.81
Total		

About 80% of the firms among sample respondents had less than 5 professionals working for them. Although the average number of professionals working with the venture capital firms/companies, as expected, increased with size⁵⁸, this increase is not accompanied by a proportional increase in the number of investments. This seems to suggest the existence of venture capital firms with larger number of professionals managing sets of a smaller number of

⁵⁸ As measured by funds being managed.

investments. This also indicates that the number of professionals managing investments depends on other factors e.g. size of investment, rather than number of investments.

6.7.2 Investment Profile

6.8 Number of Investments Since Inception

	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 10	15	38.5	38.5	38.5
Between 11-20	8	20.5	20.5	59.0
Between 21-30	3	7.7	7.7	66.7
Between 31-40	4	10.3	10.3	76.9
Between 41-50	1	2.6	2.6	79.5
More Than 51	8	20.5	20.5	100.0
Total	39	100.0	100.0	

6.9 Number of Investments at present

	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 5	15	38.5	38.5	38.5
Between 6-10	4	10.3	10.3	48.7
Between 11-15	6	15.4	15.4	64.1
Between 16-20	8	20.5	20.5	84.6
More than 25	6	15.4	15.4	100.0
Total	39	100.0	100.0	

The average number of investments per responding venture capital firm compares well with the average of 10 for Singapore and Hong Kong reported by AVCJ (1999). Roughly, 65% of the responding venture capital firms have invested in less than 30 investments each since they began. In contrast, a similar percentage of responding venture capital firms reported existing portfolio as less than 15 companies. This would suggest that almost half of the portfolio companies have been exited since the inception of the funds. The fact that the average age of the venture capital firms, among sample respondents, is 6.6 years would indicate that the holding period for the investment is between 3-4 years. Thus, there is some evidence that the holding period of investments is shorter in this region than in the United States.

6.10 Board Representation

	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 5	20	51.3	51.3	51.3
Between 6-10	3	7.7	7.7	59.0
Between 11-15	6	15.4	15.4	74.4
Between 16-20	2	5.1	5.1	79.5
Between 21-25	1	2.6	2.6	82.1
More than 25	7	17.9	17.9	100.0
Total	39	100.0	100.0	

65% of the responding companies reported less than 15 companies in their portfolio and about 75% reported that they have board representation in less than 15 companies. Thus, though board representation is clearly not practiced by all venture capital firms in these countries, it is a popular choice.

6.11 Stage Preference

Stage of Development		Preference Ranked by Stage								
		1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	Do Not Prefer
Seed	Count	0	0	1	0	0	0	0	6	26
	%	.0%	.0%	3.0%	.0%	.0%	.0%	.0%	18.2%	78.8%
Startup	Count	1	0	2	2	1	1	5	0	21
	%	3.0%	.0%	6.1%	6.1%	3.0%	3.0%	15.2%	.0%	63.6%
Early Expansion	Count	2	3	6	2	5	3	0	0	12
	%	6.1%	9.1%	18.2%	6.1%	15.2%	9.1%	.0%	.0%	36.4%
Late Expansion	Count	10	12	6	4	1	0	0	0	0
	%	30.3%	36.4%	18.2%	12.1%	3.0%	.0%	.0%	.0%	.0%
Mezzanine	Count	11	8	5	2	0	0	0	0	7
	%	33.3%	24.2%	15.2%	6.1%	.0%	.0%	.0%	.0%	21.2%
Public Co	Count	0	3	7	6	3	2	0	0	12
	%	.0%	9.1%	21.2%	18.2%	9.1%	6.1%	.0%	.0%	36.4%
Buyins-Buyouts	Count	8	6	5	3	1	0	0	0	10
	%	24.2%	18.2%	15.2%	9.1%	3.0%	.0%	.0%	.0%	30.3%
Turnaround	Count	1	1	1	0	4	5	1	0	20
	%	3.0%	3.0%	3.0%	.0%	12.1%	15.2%	3.0%	.0%	60.6%

6.12 Ranking by Preference

Financing Stage	Both Countries			Singapore		Hong Kong	
	Mean	Std. Deviation	Ranking by Preference	Mean	Ranking by Preference	Mean	Ranking by Preference
Seed	7.2857	1.8898	8	7.2857	8	0	
Startup	5.0833	2.0652	7	5.4000	7	3.5000	5
Early Expansion	3.6667	1.5916	4	3.6429	4	3.7143	6
Late Expansion	2.2121	1.1112	2	2.1429	2	2.3333	3
Mezzanine	1.9231	.9767	1	2.0526	1	1.5714	1
Public Co	3.7143	1.1892	5	3.8667	5	3.3333	4
Buyins-Buyouts	2.2609	1.2142	3	2.6000	3	1.6250	2
Turnaround	4.8462	1.7723	6	5.3750	6	4.0000	7

The collected data suggests that, irrespective of age, venture capital firms in both these countries are fairly clear about the stage of investment they would prefer. The Asian venture capitalists' inclination to prefer late expansion or investment in mature companies, as evidenced by the data on total investment by financing stage provided by the AVCJ(1999), is also depicted by the survey data as shown in Table 6.11. More than 78% of venture capital firms in both these countries are not interested in seed stage financing. Moreover, more than 60% do not invest in startups and turnarounds. A large majority of venture capital firms are involved or would like to be involved in late stage and mezzanine financing. While the stage preference for less experienced⁵⁹ and more experienced firms display similar overall patterns, it seems that firms with more experience in the venture capital industry tend to have some preference for buyouts/buy-in deals. Less experienced firms tend to prefer mezzanine financing.

A comparison of the data accumulated by preference for stage of portfolio company development and the total investment by stage of portfolio company development provided by the AVCJ brings forth some interesting points regarding both these countries. As per the AVCJ, the largest chunk (44.4%) of venture capital finance in Singapore goes to the expansion stage. The AVCJ data does not make any distinction between late stage and early stage and hence it is not possible to corroborate this information. The second largest investment according to the

AVCJ is startup financing. However, according to sample research data, startup financing is ranked far below i.e. 7th on the preference scale of the venture capital firms. The contradiction can be explained. The Singapore Government is biased toward high-tech start-ups and has geared its tax and legislative concessions accordingly. Thus, even though, seed and startup financing may not be to the liking of the venture capital firm, the investment is governed by other considerations. Another noticeable difference has been the buyout/buyin investments. According to the AVCJ buyouts/buyins constitute only 1.6% of the investment portfolio in Singapore. However, venture capital firms in Singapore rank buyouts/buyins as third on the preference scale. Thus, either there are not enough buyout/buy-in opportunities in the market or government regulations have considerably influenced the pattern of venture capital investment in Singapore.

As for Hong Kong, the most noticeable difference between preference and investment has been in relation to mezzanine financing. While it is only 2.4% of the investment, according to the AVCJ, venture capital firms among respondents accord it 1st preference. In the Singaporean and overall Asian context, mezzanine financing is of considerable importance in terms of investment.

6.13 Returns on Investment

	Existing Returns			Projected Returns		
	Frequency	Percent	Valid Percent	Frequency	Percent	Valid Percent
Less Than 20%	17	43.6	51.5	12	30.8	36.4
Between 21-40%	13	33.3	39.4	18	46.2	54.5
Between 41-60%	3	7.7	9.1	3	7.7	9.1
Total	33	84.6	100.0	33	84.6	100.0
Missing	6	15.4		6	15.4	
Total	39	100.0		39	100.0	

⁵⁹ Less than an overall average of 6.6 years of operation.

For over half of the venture capital firms studied, the existing rate of return was below the 20% mark. Less than 10% said that they were earning more than a 41% return on investment. Judging by the targeted return, the majority of the venture capital firms (54%) in these markets are anticipating better returns (Between 21% to 40%). 58% of Singaporean venture capital firms contacted reported earning less than 20% returns whereas more than half of venture capital firms in Hong Kong reported earnings between 21-40%. In both these countries, the expectation seems to outstrip the reality although this disparity is greater in Singapore. The claim of high return remains unproven.

6.8 Characteristics of Portfolio Companies

The average age of the portfolio companies considered in this study is 7.8 years, which is more than the average age of the respondent venture capital firms. On average, it has been just under 2.5 years since the portfolio companies have received venture capital.

6.14 Age of Portfolio Companies

	N	Minimum	Maximum	Mean	Std. Deviation
Years since venture capital received first	38	.00	7.00	2.4474	1.5369
Years in operation	38	1.00	34.00	7.8421	7.5821
Valid N (listwise)	37				

The research data seems to suggest that companies in Singapore and Hong Kong would generally receive venture capital, on average, in their sixth year or later. Analysis based on countries, reveal that the companies in Hong Kong have to wait longer (on average 2 years) than companies in Singapore for venture capital.

6.15 Stage of Development

	Stage of Development At Present		Stage of Development when Venture Capital First Received	
	Frequency	Percent	Frequency	Percent
Seed	2	5.1	7	17.9
Start-up	2	5.1		
Early Expansion	5	12.8	19	48.7
Late Expansion	16	41.0	4	10.3
Mezzanine	4	10.3	4	10.3
Public Company	1	2.6		
Leveraged Buyouts			4	10.3
Turnarounds	1	2.6	1	2.6
Others	8	20.5		
Total	39	100.0	39	100.0

About half of the companies, about which venture capital firms have provided information, were at an early expansion stage when the venture capital was first received. Seed stage companies constitute approximately 18% of recipients and the rest are evenly divided between late expansion, mezzanine and buy-ins/buyouts. At present 40% of the companies are at a late expansion stage. It is interesting to note that only one company has moved to the public companies stage while eight others have moved to an "other" stage. The data corroborates the point made in chapter 3 that the initial public offering is not a frequently used path for exit by the venture capital firms in these countries.

6.16 Total Assets of Portfolio Companies

	Frequency	Percent
Between US\$1.2-2.4	2	5.1
Between US\$2.4-3.6	3	7.7
Between US\$3.6-4.8	1	2.6
Between US\$4.8-5	2	5.1
More than US\$ 5 Million	31	79.5
Total	39	100.0

6.17 Technology

	Frequency	Percent
Very High	5	12.8
High	8	20.5
Medium	3	7.7
Low Tech	14	35.9
Very low Tech	9	23.1
Total	39	100.0

The size of the portfolio companies reported by the venture capital firms, as summarised in Table 6.16, has been a surprise. The average investment per company in Asia, in general, is around USD 1million (AVCJ, 1999). While designing the questionnaire on a 5-point Likert scale,

the total assets classification for the investee companies with USD 1.2 million gap in each scale with a maximum of over USD 5 million seemed like a good. However, from the data collected approximately 80% of the investee companies have total assets of more than USD 5 million. In terms of technology, 59% of the companies are low tech or very low tech. High tech and very high companies constitute 33.3%.

6.18 Board Membership

	Minimum	Maximum	Mean	%Age
Independent Board Members	0	1	.027	.36%
Board members-Nominated by Financial Institutions	0	2	.30	3.93%
Board Members-Nominated by Others	1	1	.054	.71%
Board Members-Nominated by Venture capital firms other than respondents	0	3	1.14	15.00%
Board Members- Nominated by Private Investors	1.00	3.00	.76	10.00%
Board Members-Nominated by Respondents	1	4	1.59	21.07%
Board Members- Owner/Management	2.00	6.00	3.70	48.93%
Total Board Membership	2	12	7.57	100.00

On the average, each company in the sample had 7.57 board members, which is slightly more than the United States average board size reported by Rosenstien et al. (1989) of 5.62. Sixty seven percent of the portfolio companies have an average board size between 7-9 members. The majority of the board members (48.9%) are owners/management. Second are venture capital firms with 36%. The current study differs from the research study by Rosenstein et al. (1989), which reported an average 60% representation by owners/managers and 19% by venture capital firms in the United States. The fact that 80% of the respondents had representation on the board of portfolio companies, points toward widespread use of this practice in these countries.

The primary data was collected using the research methodology outlined in this chapter. The next chapter tests the validity of research hypotheses set forth in Chapter 5 through a statistical analysis of this primary data.

7 Chapter 7: Research Findings

7.1 Introduction

The fundamental validity of the resource exchange model when applied to the venture capital value-added question is examined in this Chapter. The data compiled through questionnaires is analysed and compared with results from previous research.

7.2 Allocation of Time

Previously, two research studies (Gorman and Sahlman, 1989; Elango et al., 1995), based on United States data, have been used to assess the time that venture capitalists actually spend with their portfolio companies. In both studies the methodology used was similar to the one used in this study. In both studies the role of the lead venture capital firm was considered separately from other investors. The summary of data collected by Gorman and Sahlman (1989) relating to the role of lead venture capital firms⁶⁰ only, is presented below:-

7.1 Gorman and Sahlman (1989, p 245)

	Mean	Standard Deviation	High	Low	No. of Respondents
Visit per Year	18.7	12.9	80.0	0.0	47
Visit Duration (Hours)	4.9	2.7	15.0	0.0	47
Phone Conversation (per Month)	7.5	5.0	25.0	0.0	47
Conversation Length (min)	21.9	15.4	90.0	0.0	47
Annual Hours on site	80.5	44.0	262.5	0.0	47
Annual Hours on Telephone	35.4	37.9	225.0	0.0	47
Total Annual Hours (Direct Contact)	115	N.A.	N.A.	N.A.	47

Elango et al. (1995) only considered the total time spent by the lead venture capital firms instead of dividing it among different modes of contact. Their data is presented below.

⁶⁰ A lead venture capital firm finds the investment opportunity, negotiates the terms of the deal, and finds the other co-investors, which collectively form the syndicate.

7.2 Data: Elango et al. (1995, p 175-176)

	Assistance Provided by a VC (High)	Assistance Provided by a VC (Medium)	Assistance Provided by a VC (Low)
Average Time Spent when a lead investor (hrs/ month)	36.65	12.75	6.76
Percentage of Lead Investments	59.08%	50.16%	57.38%
Average Time Spent when a lead (hrs/ year)	439.80	153.0	81.0

Both studies were conducted in the United States where lead venture capital firms have played an active role in their portfolio companies. Since these studies were not limited to venture capital firms in any particular area within the United States or to any particular technology, the only significant difference between the two is the time period. While standard deviations of total time spent by venture capital firms with their portfolio companies, in both cases, were not available, it was evident that Gorman and Sahlman (1989) reported considerably less time (115 hours/year) spent with the portfolio company compared to the time (153 hours/year) reported by Elango et al. (1995).

Presented below is the data collected, for this study, which details the involvement of venture capital firms with their portfolio companies in Hong Kong and Singapore using three different modes of involvement. The data includes information on frequency of involvement and the time spent with the portfolio companies. The total time using all three modes of involvement have been summed to obtain total direct time as measured in terms of number of hours per year.

7.3 Involvement Statistics

	Mean (Singapore)	Mean (Hong Kong)	Mean (Overall)	Std. Deviation (Overall)
Number of Formal meetings (Per Year)	4.73	5.07	4.86	3.77
Hours of Formal Meetings (Per Meeting)	2.64	3.00	2.78	.95
Times Informal Meetings (Hours Per Year)	6.09	8.00	6.83	6.94
Hours of Informal Meetings (Per Meeting)	2.59	3.21	2.83	1.66
Total Number of Meetings	10.8	13.36	11.81	7.82
Hours per meeting	2.74	3.05	2.86	.804
Total Meetings (Hours Per Year)	30.73	41.64	34.97	23.37
Number of Telephone Calls (Per Month)	6.96	6.27	6.68	5.85
Minutes of Telephone Calls (per Call)	15.43	19.67	17.11	9.27
Annual Hours on Telephone	23.30	21.73	22.68	23.42
Total Direct Contact Time (Hours per Year)	54.95	64.0	58.67	34.42

A z test⁶¹ was performed to compare the means of samples collected by this study and Gorman and Sahlman (1989) and to find out if any significant difference existed between the two. Table 7.4 contains a statistical comparison of Gorman and Sahlman's (1989) data with the data gathered by this study.

7.4 Comparative Statistics

	Standard Error of Differences in Means	Z value
Visit per Year & Number of Meeting per Year	2.30	3.00
Visit Duration (Hours/meeting) & Average Hours per Meeting (Formal and Informal)	.42	4.90
Phone Conversation (per Month)/Number of Telephone Calls (Per Month)	1.23	0.67
Conversation Length (Converted into annual hours) & Annual Hours on Telephone	2.74	1.75
Annual Hours on site & Annual Hours in Meetings	7.54	6.04
Annual Hours on Telephone & Annual Hours on Telephone	6.80	1.87

In the case of telephone contact (number of calls and the duration), there was no significant difference between the two samples⁶². However the differences on meetings (number and duration) are significant, indicating, that venture capitalists in the United States hold more

⁶¹ The z test here measures the difference between means of the two samples. A two-sample z test has been performed because standard deviation in the case of both the samples is known and the sample size is large (i.e. $n > 30$).

⁶² The z value has been compared with test statistics ± 1.96 (95% Confidence)

frequent meetings and allocate more time to conducting these meetings than venture capitalists in Hong Kong and Singapore

In order to compare the Asian responses with the United States ones further, a comparison was also made with the data collected by Elango et al. (1995). That study only considered information about the total time that venture capitalists spent with their portfolio companies. In the absence of exact information about standard deviation in the case of Elango et al. (1995), a t test⁶³ comparing 153 hours⁶⁴ with the data collected for this study was performed. Significant differences between the two averages are clearly depicted ($p < 0.01$).

7.5 Test Value = 153

T	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
				Lower	Upper
Total Direct Contact Time-16.445 per Year	35	.000	-94.3333	-105.9789	-82.6878

The possibility that venture capitalists in the United States, Singapore and Hong Kong maintain the same level of telephone contact cannot be ruled out. However, there is sufficient evidence to suggest that the total time allocated to involvement activities by venture capitalists in the United States is significantly more than that allocated by venture capitalists in Hong Kong and Singapore.

The proposition (1) that *Venture capital firms allocate less time to managing portfolio companies in Hong Kong and Singapore than in the United States* is strongly supported. Thus, venture capitalists in Hong Kong and Singapore visit their portfolio companies less often and spend less time with them

⁶³ "Student" (real name: W. S. Gossett [1876-1937]) developed statistical methods (t test) to solve problems stemming from his employment in a brewery. The t-test assesses whether the means of two groups are statistically different from each other. This analysis is appropriate whenever the objective is to compare the means of two groups. A T test has been used here because standard deviation in the case of data by Elango et al. (1995) is not available.

⁶⁴ Average time venture capitalists spend with their portfolio companies in direct contact in a year.

than do venture capitalists in the United States. There is, however, nothing to suggest that the contact through telephone is any different.

It is relevant to note that the mean difference between time spent by venture capitalists in Singapore and Hong Kong is not significant. Unlike Elango et al. (1995) the research data is much more easily divided into two categories with the active venture capitalists spending around 100 hours per year in direct contact with the portfolio company and the less active spending around 40 hours per year.

7.3 Number and Importance of Activities

Venture capital firms were asked to indicate the extent of their involvement with their portfolio companies. Table 7.6, which follows, summarises their responses. The question on involvement was designed to cover the contribution of the venture capital firms, in different activities, compared to their portfolio companies. These activities were based on a list of 15 activities (Table 6.1) that have been extracted from previous research studies relating to venture capital (MacMillan et al., 1988; Gorman and Sahlman, 1989; Rosenstien et al., 1989; Ehrlich et al., 1994; Elango et al., 1995). Involvement was rated on a 5 point Likert scale vis-a-vis contribution of the portfolio companies. A score of 3 indicated as much contribution by a venture capital firm in an activity as a portfolio company. A score of 1 meant that a venture capital firm has never been involved in that activity.

7.6 Involvement Activities of Venture Capital Firms⁶⁵

	Both Countries		Singapore		Hong Kong	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Monitoring Performance	3.37	0.91	3.22	0.90	3.60	0.91
Obtaining Alternative Sources of Equity Finance	3.29	1.27	3.04	1.40	3.67	0.98
Interfacing with Investor Groups	3.00	1.36	2.87	1.52	3.20	1.08
Ongoing Strategy Development	2.74	1.29	2.39	1.31	3.27	1.10
Obtaining Alternative Sources of Debt Finance	2.71	1.14	2.52	1.24	3.00	0.93
Formulation of Initial Business Strategy	2.63	1.24	2.48	1.38	2.87	0.99
Management of Crisis	2.26	1.20	2.04	1.11	2.60	1.30
Development of Professional Support Groups	1.79	1.14	1.43	0.95	2.33	1.23
Personnel Motivation	1.76	0.85	1.61	0.72	2.00	1.00
Interview and Selection	1.76	0.79	1.65	0.78	1.93	0.80
Personnel Search	1.63	0.82	1.39	0.72	2.00	0.85
Negotiation of Terms with Prospective Candidates ⁶⁶	1.53	0.51	1.52	0.51	1.53	0.52
Personnel Replacement	1.37	0.49	1.39	0.50	1.33	0.49
Development of Production Techniques	1.37	0.54	1.30	0.47	1.47	0.64
Selection of Vendors and Equipment	1.29	0.46	1.22	0.42	1.40	0.51

Table 7.6 indicates that venture capital firms in both countries are involved in all the identified activities, to a lesser or greater extent. The following activities scored least based on the criteria that 50% of the venture capital firms claim that they had never been involved in these or in cases where venture capital firms were involved, their involvement in these activities had never been more than that of the portfolio company;

- 1) Selection of vendors and equipment;
- 2) Development of production techniques;

⁶⁵ The list of these activities has been derived from previous research studies regarding involvement activities of venture capital firms as discussed in Chapter 5.

⁶⁶ For induction into portfolio management team.

- 3) Personnel replacement;
- 4) Negotiation of terms with prospective candidates for employment;
- 5) Personnel search;
- 6) Interview and selection;
- 7) Personnel motivation; and
- 8) Development of professional support groups.

Except for 3 activities, out of a total of 15, the venture capital firm's involvement averaged more than 1.50, which is halfway between no involvement and less involvement than the portfolio company. This means that venture capital firms are involved in 12 out of 15 activities in which venture capital firms from United States are known to be involved. No venture capitalists, among respondents, have added to the list of 15 involvement activities. Thus, proposition (2) that *venture capital firms in Singapore and Hong Kong are involved in similar activities with their portfolio companies as venture capital firms in the United States*, is supported

To identify the areas of activities where venture capital firms in these countries believe they have made the greatest contribution, the five point Likert scale was averaged for each activity and ranked accordingly⁶⁷. The statistical comparison of this research with the research studies conducted in the United States proved to be a difficult task because of the different scales (MacMillan et al., 1988; Ehrlich et al., 1994) and methodologies (Gorman and Sahlman, 1989; Rosenstein et al., 1989) used by these researchers to rank the activities in which venture capital

⁶⁷ None of the respondent reported a score of 5 in any activity, which represented more contribution than the portfolio company.

firms are involved, in order of importance. Therefore, ranking of activities by two studies were compiled. Ehrlich et al. (1994) was selected for comparison purposes since it was the most recent comparable study. Rosenstien et al. (1989) was selected from earlier studies because the list of activities, contained in that study, compared well with the list used in Rosenstien et al.'s study. The results and a comparison of the findings are shown in Table 7.7.

7.7 Ranking of Activities

	Rankings Rosenstein et al. (1989)	Rankings (This Study)	Rankings Ehrlich et al. (1994)	Rankings (This Study)
Monitoring Performance	2	1	3	1
Obtaining Alternative Sources of Equity Finance	5	2	2	2
Interfacing with Investor Groups	1	3	1	3
Ongoing Strategy Development	3	4	4	4
Obtaining Alternative Sources of Debt Finance	4	5		
Formulation of Initial Business Strategy	7	6	4	5
Development of Professional Support Groups			8	6
Interview and Selection	6	7		
Negotiation of Terms with Prospective Candidates	8	8		
Personnel Replacement	6	9	7	7
Development of Production Techniques			6	8
Selection of Vendors and Equipment			5	9

It should be noted that some of the activities that do not appear in the selected research studies were not compared with activities in this study. Additionally, some of the activities that do not appear in this research study, but appeared in the selected studies, have been placed against the nearest relating activity. In order to find out whether the ranking assigned in this study is any different from the ranking assigned by the two selected authors, a Wilcoxon signed-rank test⁶⁸ was performed.

⁶⁸ The Wilcoxon signed rank test can be considered a non-parametric equivalent of the matched paired t-test. It is used to test the proposition that two paired samples based on ranks have come from the same population. Because it is non-parametric, it makes no assumptions about the distribution of the data. It is preferred over simple matched pair sign test, in cases where the extent of difference (in ranking), as in this case, needs to be incorporated.

7.8 Test Statistics

	Ehrlich et al.(1994) – This study	Rosenstein et al.(1989)-This study
Z	-.755a	-.647a
Asymp. Sig. (2-tailed)	.450	.518

a Based on negative ranks.

There is little indication in the test that the ranking assigned to activities based on the previous research studies is any different from the ranking assigned in this study. The proposition (3) *that the importance of value added activities attributed to venture capital firms display similar patterns in Singapore, Hong Kong and the United States* is also supported.

7.3.1 Value addition

Since this study covers only the venture capital firms' perspective, it does not include a direct question regarding the assessment of value addition because such a question is likely to be self-testing, tautological and leading. This aspect, therefore, needed to be assessed from a different angle. If venture capital firms do add value, it stands to reason that the time spent should be accompanied by what venture capital firms perceive to be their participation in the value added activities. Although the time spent by the venture capital firms with their portfolio companies provides a measure of involvement, it does not necessarily explain whether this time is used for value adding activities or reducing information asymmetry.

7.9 Correlation⁶⁹ Direct Contact Time and Average of Activities

Average of Activity	Pearson Correlation	Total Direct Contact Time per Year- Singapore	Total Direct Contact Time per Year- Hong Kong
		.538	.217
	Sig. (2-tailed)	.010	.455
	N	22	15

As expected, significant correlation was found between the involvement activity level and the time venture capitalists spend with their portfolio companies in Singapore, as indicated in Table 7.9. However, the correlation in Hong Kong although positive, was not significant and hence the result inconclusive. Overall, the result implies that venture capitalists use the time that they allocate to the companies for actual participation and value addition. The proposition (4) *that venture capital firms in Singapore and Hong Kong see themselves as adding value to the business through their involvement* is thus partly supported.

7.3.2 Value added and intention of venture capital firm to interact.

The actual participation of the venture capital firms was taken to be their intention to participate since the difference between venture capital firms' actual participation and their expected participation has not been found to be significant (MacMillan et al., 1988). As explained in chapter 4, out of many possible factors that affect involvement levels, firm policy, venture capital culture and the extent of commitment were measured herein. The average score of the importance, on a scale of 1-5 that venture capitalists assigned to their activities has been calculated and used for comparison purposes.

⁶⁹ A correlation test has been performed because there has been no assumption of any causal relationship between the time spent by venture capitalists with their portfolio companies and the number of activities that venture capitalists are involved in their portfolio companies. Simple (Spearman's) correlation has been used, in this thesis, in cases of correlation between parametric data or correlation between parametric and non-parametric data.

The tables (7.10-7.12) show correlations and a regression model of the effect of three factors, which were expected to affect the willingness to be involved, on the level of involvement.

7.10 Value added and intention of venture capital firm to interact.

				<i>Correlations</i>			
	Total Contact Year	Direct Time	Average per Activity	of Your Policy	Company General Trend in the Industry	Percentage Share Equity	in
Total Direct Time per Year	Pearson Correlation Sig. (2-tailed) N	1.000 .467 36	.467 .004 36	.303 .073 36	.105 .543 36	.021 .902 36	
Average of Activity	Pearson Correlation Sig. (2-tailed) N	.467 .004 36	1.000 .000 38	.636 .000 38	.010 .951 38	.390 .016 38	
Your Company Policy	Pearson Correlation Sig. (2-tailed) N	.303 .073 36	.636 .000 38	1.000 .000 38	.171 .304 38	.305 .062 38	
General Trend in the Industry	Pearson Correlation Sig. (2-tailed) N	.105 .543 36	.010 .951 38	.171 .304 38	1.000 .000 38	-.155 .353 38	
Percentage Share Equity	Pearson Correlation Sig. (2-tailed) N	.021 .902 36	.390 .016 38	.305 .062 38	-.155 .353 38	1.000 .000 39	

7.11 Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.671	.450	.401	.4894

a Predictors: (Constant), Percentage Share in Equity, General Trend in the Industry, Your Company Policy

7.12 Coefficients

	Unstandardized Coefficients	Std. Error	Standardised Coefficients	t	Sig.
(Constant)	.786	.363	Beta	2.164	.038
Your Company Policy	.328	.077	.584	4.254	.000*
General Trend in the Industry	-3.811E-02	.086	-.058	-.441	.662
Percentage Share in Equity	7.995E-02	.054	.202	1.478	.149

Dependent Variable: Average of Activity

* p < .01

The findings are mixed. It seems that the venture capital firm's understanding of the trends in their industry (their culture) does not affect their decision to get involved in value added

activities. However, the venture capital firm's policy, regarding involvement, is not only related both to the extent of participation in activities and the time venture capitalists spend with their portfolio companies, but significantly affects the level of activity ($p < 0.01$), as shown in the last column of table 7.12). The extent of commitment, as measured by the percentage of equity in the portfolio company, was also found to be related to the activity level but not associated with time spent. The proposition (5) that the *value-added perception of venture capital firms will also depend on the factors, which effect the willingness of both the parties to interact* is supported in the case of firm policy, partly supported in case of the equity share and not supported in the case of venture capital culture.

7.4 Perception of Resource Need of the Portfolio Company

The affect of four factors i.e. riskiness of the venture, performance of the portfolio companies, reputation of the management team of the portfolio companies and competency of the management team of the portfolio companies, on the resource needs/demands of portfolio companies was measured. The results are presented in Table 7.15. As explained in Chapter 5, risk has been measured in terms of level of technology (low to high) and the stage of development of the portfolio company. Information from the venture capital firms was sought on the reputation, competency and performance of the portfolio company. The resource demand as a function of the technological nature of the project was not significant, although the relationship between the stage of development of the portfolio company and the resource perception of the portfolio company was significant at the 10% level (proposition 6a). The performance of the portfolio company seems to play a significant role in what venture capital firms perceive as the resource needs/demands of the portfolio company so proposition (6b) is supported. The proposition (6c) that the assessment of the resource strength of portfolio companies depends on the perceived

reputation of the portfolio company was also supported. The competency of the management of the portfolio company as an indicator of resource need was not supported (proposition 6d).

7.13 Portfolio company assessment – Correlations

		Portfolio Assessment	CompanyGeneral Competency	General Reputation of the PC/Mgt	Stage of Development At Present	Technology	Performance of the PC
Portfolio Company Assessment	Pearson Correlation	1.000	.348	.563	.211	-.012	.506
	Sig. (2-tailed)	.	.035	.000	.203	.943	.001
	N	38	37	37	38	38	37
General Competency	Pearson Correlation	.348	1.000	.784	.128	.072	.507
	Sig. (2-tailed)	.035	.	.000	.444	.669	.001
	N	37	38	38	38	38	38
General Reputation of the PC/Mgt	Pearson Correlation	.563	.784	1.000	.000	-.001	.568
	Sig. (2-tailed)	.000	.000	.	1.000	.997	.000
	N	37	38	38	38	38	38
Stage of Development At Present	Pearson Correlation	.211	.128	.000	1.000	.017	-.090
	Sig. (2-tailed)	.203	.444	1.000	.	.919	.590
	N	38	38	38	39	39	38
Technology	Pearson Correlation	-.012	.072	-.001	.017	1.000	.146
	Sig. (2-tailed)	.943	.669	.997	.919	.	.381
	N	38	38	38	39	39	38
Performance of the PC	Pearson Correlation	.506	.507	.568	-.090	.146	1.000
	Sig. (2-tailed)	.001	.001	.000	.590	.381	.
	N	37	38	38	38	38	38

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.685	.470	.384	4.6812

Coefficients

	Unstandardized Coefficients		Standardised Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	23.607	4.102		5.755	.000
Stage of Development At Present	.682	.338	.274	2.021	.052
Technology	-.137	.608	-.030	-.226	.823
Performance of the PC	2.045	.959	.349	2.133	.041
General Reputation of the PC/Mgt	4.366	1.482	.664	2.946	.006
General Competency	-2.535	1.442	-.383	-1.758	.089

a. Dependent Variable: Portfolio Company Assessment

7.4.1 Perception of Resource Availability with Venture capital firms

The average amount of capital under management and number of professionals working for the venture capital firm were taken as a measure of the size of the venture capital firm. To determine the impact of experience, two factors directly affecting the accumulated experience of the venture capital firm were used, which included the average experience of professionals working for the firm in the area of venture capital and the average experience of professionals working for the firm in other industries. Assessing reputation is a complex process. The factors that go into the evaluation of reputation are not only numerous but frequently a subject of debate (Jacob, 1995). In order to evaluate reputation three factors were relied upon. These could be obtained objectively from the venture capital firm and are known to affect the reputation of a business. These factors include financial performance (Vergin and Qoronfleh, 1998), age of venture capital firm (Gompers and Lerner, 1999) and the number of credibility transactions⁷⁰ (Herbig et al., 1994). The returns generated by the venture capital firm were taken as an indicator of financial performance. To represent credibility transactions, the number of investments financed by the venture capital firms since inception were considered.

The proposition 7(a) regarding reputation affecting resource perception received mixed support. There was a significant correlation between the number of investments and the existing returns being generated by venture capital firms and both these factors seem to affect resource perception⁷¹. The results indicate that venture capital firms consider the returns generated by their investments a better indicator of their resource pool, rather than the number of investments

⁷⁰ The number of similar transactions that a person has completed in the past

⁷¹ In cases where there is a high degree of correlation between independent variables, it is not advisable to test both variables against the dependent variable at the same time since it can cause the problem of multi-collinearity. However, in this case, the correlation between the two is not large enough for them to pose a problem.

that they have been able to handle. A link between the age of a venture capital firm and resource perception is not indicated.

The proposition 7(b) that venture capital firms' assessment of their resource strength depends on their size was not supported. The size of the venture capital firm, as measured by capital under management and the number of professionals working for the firm, does not significantly alter the assessment of their firm's resources. The proposition 7(c) relating higher resource strength with more experience was also not supported. Apparently, some venture capital firms do not believe that more years in the venture capital business increases the pool of those resources that they can pass on to their portfolio companies. Similarly, the experience of professionals, in the venture capital industry, working for the venture capital firms also does not alter the perception of venture capital firms regarding their resource strength. However, venture capital firms with experience in other industries besides venture capital feel more confident in terms of their resource pool.

7.14 Venture capital firm's Assessment- Pearson Correlation

	Venture capital firms Assessment	Number Professionals	Years Firm has been in Venture Business	Avg years Capital Experience- VC Industry	Avg. Experience Other Industries	Average Amount Capital Under Management	Number of Investments Since Inception
Number of Professionals	.345*						
Years Firm has been in Venture Capital Business	.297	.104					
Avg years of Experience- VC Industry	-.021	-.018	.489**				
Avg. Experience Other Industries	.211	-.125	-.255	-.418**			
Average Amount of Capital Under Management	.357*	.561**	-.158	-.130	.034		
Number of Investments Since Inception	.386*	.557**	.131	.126	-.046	.626**	
Existing Returns	.589**	.469**	-.201	-.080	-.048	.434*	.665**

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.769	.591	.476	2.4788

Coefficients

	Unstandardized Coefficients	Std. Error	Standardised Coefficients	t	Sig.
(Constant)	B		Beta		
	25.818	2.804		9.208	.000
Years Firm has been in Venture Capital Business	-.110	.106	-.178	-1.034	.311
Avg. years of Experience- VC Industry	.283	.199	.234	1.424	.167
Avg. Experience Other Industries	.407	.137	.428	2.969	.007
Average Amount of Capital Under Management	.301	.375	.174	.803	.429
Existing Returns	2.511	1.116	.452	2.250	.033
Number of Investments Since Inception	-6.409E-02	.455	-.037	-.141	.889
Number of Professionals	.113	.107	.182	1.055	.302

a Dependent Variable: Venture capital firms Assessment

7.4.2 Venture capital firm/Portfolio Company Resource perception and value added

The possibility of a relationship, between the resource assessment of the portfolio company/venture capital firm, time spent with the portfolio company by the venture capital firm and the level of involvement in activities by the venture capital firm, has been measured. In order to obtain another indicator of value added, the total time that venture capital firms spent with their portfolio companies and the sum of the activities in which venture capital firms were involved, was divided into 5 categories (dummy variables). The resultant dummy variables were multiplied to obtain a figure, which represented high involvement as a combination of time and activities. In order to discover a relationship Spearman's measure of correlation was used.

7.15 Correlations (Spearman's rho⁷²)

		Portfolio Company Assessment	Venture capital firms Assessment	Total Contact Year	Direct Time	Average of perActivity
Venture capital firms Assessment	Correlation Coefficient	.010				
	Sig. (2-tailed)	.952				
	N	38				
Total Direct Contact Time per Year	Correlation Coefficient	-.124	-.222			
	Sig. (2-tailed)	.480	.200			
	N	35	35			
Average of Activity	Correlation Coefficient	-.384*	-.337*	.460**		
	Sig. (2-tailed)	.019	.041	.005		
	N	37	37	36		
Product (Activities and Time)	Correlation Coefficient	-.207	-.231	.859**		.810**
	Sig. (2-tailed)	.233	.183	.000		.000
	N	35	35	36		36

* Correlation is significant at the .05 level (2-tailed).

** Correlation is significant at the .01 level (2-tailed).

No significant relationship was found between the venture capital firm's assessment of their own resources and the time they spent with their portfolio companies. The relationship of resource assessment of venture capital firms with the number of activities in which they participate produced a negative correlation. A significant negative relationship was found between venture

⁷² Instead of Pearson's correlation, Spearman's rho has been used since it is considered to be better suited for rank ordered non-parametric data.

capitalist's assessment of portfolio companies' resources and the number of activities that venture capital firms are involved in their portfolio companies.

Based on an overall measure of involvement, both the propositions (8 & 9 respectively) that venture capital firms *who rate the resources of the portfolio company lower will rate value added comparatively higher* and that *venture capital firms who rate their own resources higher will rate value added as higher* are not supported. Apparently, for venture capital firms, their resource strength does not encourage involvement in their portfolio companies.

7.4.3 Value added and activities.

Venture capital firms generally assess their resource strength in the following areas as highest:

- 1) Project/Idea Evaluation;
- 2) Monitoring Performance;
- 3) Number of contacts-Financial Institutions;
- 4) Crises Management;
- 5) Strategy Planning; and
- 6) Financial Expertise;

Venture capital firms assess and rank the resources of portfolio companies highest in:

- 1) Number of contacts-other industries;
- 2) Operational Planning;

- 3) Industry Knowledge;
- 4) Personnel Management; and
- 5) Number of Contacts-PC Industry;

Apparently, when a venture capital firm perceives itself as being strong in particular resource areas it will perceive the portfolio company as weak in those areas.

The average scores of individual strengths for both venture capital firms and their portfolio companies in an activity were matched and the differences calculated to indicate a resource gap. A high positive figure represented a higher resource gap with venture capital firms in superior position whereas a high negative figure represented a resource gap with portfolio companies in a superior position in terms of that resource. The resultant figures were then ranked according to the perceived gap. The resource gap ranking was matched with the actual participation results of this study based on classifications discussed in the chapter on research methodology (Table 6.1).

7.16 Resource Gap

	Venture capital firm- Resource Availability	Portfolio Company Resource Need	Resource Gap –	Resource Ranking Based on	
	Mean Score	Mean Score		Resource Gap	Actual Participation
Number of Contacts- Other Industries	2.868421	4	-1.131579	10	9
Operational Planning	3.105263	3.921053	-0.81579	9	7
Personnel Management	3	3.789474	-0.789474	8	8
Number of Contacts PC Industry	2.973684	3.710526	-0.736842	7	6
Project/Idea Evaluation	3.184211	3.526316	-0.342105	6	5
Number of contacts Financial Institution	3.578947	3.526316	0.052631	5	2
Monitoring Performance	3.605263	3.5	0.105263	4	1
Crises Management	3.710526	3.552632	0.157894	3	6
Strategy Planning	3.736842	3.447368	0.289474	2	4
Financial Expertise	3.815789	3.421053	0.394736	1	3

Since it was postulated that resource gap and actual participation go together, a positive correlation between the two should exist. In order to determine the correlation between the two Spearman's rank correlation was conducted between the final rankings.

7.17 Correlation (Spearman's rho)

		Resource Gap
Actual Participation	Correlation Coefficient	.748*
	Sig. (2-tailed)	.013
	N	10

* Correlation is significant at the .05 level (2-tailed).

The results show significant correlations between the two rankings. Thus, the proposition that higher participation is rated in activities where perception of resource need and resource availability (resource gap) is greater is generally supported.

Although the overall result seems to support the gap/participation proposition (10), there are clearly two sides to the issue. Instances where a gap is perceived with venture capital firms in superior position (positive) and instances where the gap exists with portfolio companies in superior position (negative). The basic premise does not follow from all individual resources. For example, though monitoring is rated as the primary participation activity it stands at number 4 in the resource gap scale. The splitting of rankings according to positive and negative resource gaps sheds some light on the final analysis. While, for lack of significant results, the evidence remains inconclusive as regard the justification for areas of higher involvement (positive resource gap), the verdict regarding areas of least involvement seemed to be supported ($p < .05$). This means that venture capital firm's involvement pattern does take into account resources where portfolio companies are perceived to be weak.

Not all propositions set forth in Chapter 5 were supported by the primary data. The next chapter is used to discuss the results in relation to the propositions and to explore alternative explanations in cases where these propositions were not supported. Other aspects of the venture capital firm/portfolio company relationship that can be extracted from further analysis of the primary data are also explored.

8 Chapter 8: Discussion

8.1 Introduction

The analysis in this chapter is intended to shed more light on the research findings. The results produced by the last chapter is studied in greater detail and with the help of available data, further analysis is performed to look at all possible aspects of the propositions put forward in Chapter 4. The results have also been compared with past research studies which have produced similar data. In the light of this and past research, plausible reasons for results that were contrary to expectations have been offered.

8.2 Discussion

8.2.1 The Extent of Involvement-Time Allocation

The data produced by testing of proposition 1 produced interesting results. The survey indicated that venture capitalists spent on average about 58 hours in a year in direct contact with a portfolio company. Venture capitalists in Hong Kong tend to spend slightly more time (64 hours) than venture capitalists in Singapore (55 Hours). Most of this time (39%) is spent on interaction through the telephone. Pandey and Jang (1996) found a similar trend in the Taiwanese market. The second most important means of interaction between venture capital firms and portfolio companies was the informal meeting, which accounted for about 35% of direct contact time. The rest of the direct contact was through formal meetings. On average, the time venture capitalists spent in direct contact with their portfolio companies worked out to be just over an hour per week. This contact was further divided into a number of modes of involvement. The results supported Gorman and Sahlman's (1989) findings, conducted in the United States, that venture capital firms tend to spend their time with companies in small increments. Typical venture capital firms in Singapore and Hong Kong engaged in a formal meeting with the portfolio company just over once a quarter and spent around three hours per formal meeting.

The frequency of informal meetings was greater but the duration of the informal meetings was similar to that of formal meetings. As expected, the time spent in informal meetings varied more than that in formal meetings. All in all, venture capitalists, in general, met face to face with their portfolio companies' management just under once a month. Venture capitalists in these countries talked to their portfolio company's management on average about 6.8 times in a month with each call lasting for about 17 minutes.

8.1 Analysis- Involvement Statistics

	Mean (Singapore)	Mean (Hong Kong)	Overall Mean	Percentage Time (Direct Contact)	Std. Deviation
Total Time of Formal Meetings (hours)	12.8636	15.6667	14.0000	23.86%	12.2020
Total Time of Informal Meetings (Hours)	17.8636	25.0000	20.6389	35.17%	18.4331
Total Telephone Time per Year	23.3043	21.7333	22.6842	38.67%	23.4211
Total Direct Contact Time per Year	54.9545	64.5000	58.6667		34.4184
Total Number of Reports	3.1053	2.5000	2.8485		2.1812

The overall results show that venture capitalists spent less time with their portfolio companies in Singapore than in Hong Kong. Hong Kong venture capitalists spent about ten hours more per year in conducting meetings than their counterparts in Singapore. While in both countries similar time is spent on the telephone; venture capitalists in Hong Kong are likely to put significantly more efforts into informal meetings, as indicated by the frequency and time allocated. The later result is unexpected because Singapore is smaller in size (637 sq km) compared to Hong Kong (1092 sq km) making travelling easier and thus personal meetings more convenient. Moreover, a large amount of venture capital in Hong Kong is invested in Mainland China (AVCJ, 1999) making personal contact more difficult. One possible reason for this unexpected finding, as mentioned in Chapter 2, may well be that the venture capital investment per project in Hong

Kong (approx. USD 7 million) is much larger than that in Singapore (approx. USD 2 million) making a personal visit a feasible⁷³ option.

There is a clear indication that informal contact like telephone calls and informal meetings occupied a prominent place (74%) in the venture capital firm/portfolio company's direct interaction. This may be because small businesses, more likely to be a portfolio company, usually conduct business more informally than large businesses (Chow et al., 1997), and this influences the mode of their interaction with the venture capital firm. The informality in the relationship is probably greater than in western venture capital firm/portfolio company dyads because these countries boast a Chinese business philosophy with an emphasis on relationship rather than systems (Whitley, 1992; James, 1995).

The fact that venture capitalists spent only just over an hour per week in direct contact does not support the view that venture capital firms, in any way, are involved in the day-to-day affairs of the portfolio companies in these countries. As the AVCJ (1999) data demonstrated, venture capitalists in Hong Kong and Singapore manage about 2 projects each. Thus, direct contact with their portfolio companies account for, at the most, about 5% of their working time⁷⁴.

8.2 Correlations: Modes of Involvement

		Total Time of Formal Meetings (Hours)	Total Time of Informal Meetings (Hours)
Total Time of Informal Meetings (Hours)	Pearson Correlation	.128	
	Sig. (2-tailed)	.458	
	N	36	
Total Telephone Time per Year	Pearson Correlation	.061	.063
	Sig. (2-tailed)	.719	.717
	N	37	36

⁷³ More regular monitoring entails more expenses. The costs of monitoring a project must justify the amount of investment to be financially viable.

⁷⁴ Based on 300 working days in a year and 8 hours per day.

Table 8.2 shows the results of a simple correlation between modes of direct contact. No significant correlation existed between the total time spent in informal meetings and the total telephone contact time per year. This means that venture capital firms are not likely to use these modes of interaction as a substitute for each other.

Table 8.3 shows data on direct contact classified according to the type of ownership of the venture capital firm.

8.3 Type of Venture capital firm and Modes of Involvement

	Corporate Subsidiary		Subsidiary of a Financial Institution		Independent Company/Partnership	
	N	Mean	N	Mean	N	Mean
Times Formal Meetings	6	3.83	10	5	16	4.56
Hours of Formal Meetings	6	3.33	10	2.80	16	2.62
Times Informal Meetings	6	8.67	10	5.10	15	7.53
Hours of Informal Meetings	6	3.00	10	2.60	15	3.07
Number of Telephone	6	6.67	10	7.90	17	5.35
Minutes of Telephone Calls	6	12.50	10	21.50	17	17.65
Total Time of Formal Meetings (hours)	6	12.1667	10	15.6000	16	12.0625
Total Time of Informal Meetings (Hours)	6	23.6667	10	13.1000	15	25.6667
Total Telephone Time per Year	6	16.0000	10	38.4000	17	15.1765
Total Direct Contact Time per Year	6	51.8333	10	67.1000	15	55.0000
Total Number of Reports	6	2.3333	8	3.5000	15	3.0667

As Table 8.3 shows, corporate subsidiaries are involved in a comparatively smaller number of formal meetings compared to the number of their informal meetings with the portfolio companies. Moreover, the number of formal reports is also higher in the case of corporate subsidiaries than in subsidiaries of financial institutions or independent venture capital firms/companies. This result is rather unexpected since corporate subsidiaries usually borrow formalised structures from the parent company and tend to rely more on formal procedures, like a predetermined decision making process (Chesbrough, 2000). Table 8.3 highlighted the fact that subsidiaries of financial institutions spent comparatively more time in involvement activities compared to corporate subsidiaries or independent venture capital firms. Most of this time is spent on the telephone rather than in face-to-face meetings. Independent venture capital firms

and corporate subsidiaries spent more time on informal meetings than other modes of interaction.

Reports are infrequent and the number of reports required to be filed by the portfolio companies does not exceed 4 at one time. These research findings tend to side with Gompers (1995), who has argued that the role of reports is relatively insignificant in portfolio company monitoring, rather than with Robbie et al. (1992) and Sweeting (1991).

Since entrepreneurs in Asia are unaccustomed to third party involvement, the lack of time allocated by venture capitalists to portfolio companies may be due to entrepreneurs resisting the venture capital firm's involvement. This argument was also a basis for the proposition that venture capital firms in Singapore and Hong Kong allocate less time to their portfolio companies than venture capitalists in the United States. The results of the survey provide an alternative explanation for the low level of a venture capital firm's involvement in its portfolio company. About 46% of venture capital firms cited time constraints as the major reason for less involvement. To further investigate why venture capitalists allocate less time to their portfolio companies in Singapore and Hong Kong, several possibilities were explored. The possibility that the venture capital firm's time allocation has decreased over time, as a worldwide trend, is not supported when research surveys conducted in the United States by Gorman and Sahlman (1989) are compared to Elango et al. (1995). The later study reports more time allocated to portfolio companies rather than less. The explanation that venture capital firms in Hong Kong and Singapore are managing more portfolio companies per professional or managing more funds per professional, compared to the United States, was also not supported by secondary data. The number of investments managed per professional in Hong Kong was 1.6 whereas it was 2.5 in Singapore. The investment per professional is USD 11million in Hong Kong and USD 4.6

million in Singapore⁷⁵. In the United States, the number of investments per professional is around 2 and the amount of investment per professional is close to USD 20 million (Elango et al., 1995). Another plausible explanation stems from the general belief that venture capital deals are fairly hard to find in Asia because company transparency is a general problem (Lee-Young, 2000). Put together, this information points toward the likelihood that venture capital firms in Hong Kong and Singapore may spend more time than their counterparts in the United States, in finding the right deal. There is also a possibility that venture capitalists may have to spend more time screening proposals although these propositions have not been tested herein

Table 8.4 below shows correlations between experience and the use of different modes of financing.

8.4 Experience and the use of modes of involvement

		Total Formal (hours)	Time Meetings Informal (Hours)	Time Meetings per Year	Telephone Time
Years Firm has been in Venture Capital Business	Pearson Correlation	.145	.060		.346*
	Sig. (2-tailed)	.391	.730		.033
Avg. years of Experience-VC Industry	Pearson Correlation	.329*	-.089		.338*
	Sig. (2-tailed)	.047	.606		.038
Avg. Experience Other Industries	Pearson Correlation	-.185	-.062		-.476**
	Sig. (2-tailed)	.272	.717		.003
Total Time of Formal Meetings (hours)	Pearson Correlation		.128		.061
	Sig. (2-tailed)		.458		.719
Total Time of Informal Meetings (Hours)	Pearson Correlation	.128			.063
	Sig. (2-tailed)	.458			.717
Total Telephone Time per Year	Pearson Correlation	.061	.063		
	Sig. (2-tailed)	.719	.717		

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

It is quite clear that venture capital firms, with more experience in venture capital make much more use of telephone contact with portfolio company management than venture capital firms

⁷⁵ AVCJ, 1999 (For detail calculations see appendix I and II).

with comparatively less experience of venture capital. Moreover, they are also much more likely to spend more time in formal meetings. The striking point in the above analysis is a strong negative correlation between a venture capital firm's experience in the portfolio company's industry and the use of telephonic contact. Why this happens is a difficult question to answer. It may be that since venture capital firms with industry experience know practical industry environments, they are in a much better position to assess the developments in a portfolio company in person. They may, thus, prefer personal visits to telephonic conversations.

Table 8.5 shows different modes of involvement against the level of technology being pursued by the portfolio company.

8.5 Technology and modes of Involvement

Technology		Total Formal (Hours)	Time of Meetings (Hours)	Total Time of Meetings (Hours)	Total Telephone Time per Year	Total Contact per Year	Direct Time Reports to Venture Capital Firms	Total Number of Provided
Very low Tech	N	7	7	7	7	7	6	
	Mean	24.7143	20.5714	20.2857	65.5714	2.0000		
Low Tech	N	13	12	14	12	13	13	
	Mean	11.2308	18.9167	21.2143	54.9167	3.3077		
Medium	N	4	4	4	4	4	4	
	Mean	8.7500	21.2500	13.7500	43.7500	3.5000		
High	N	9	9	9	9	9	6	
	Mean	13.5556	22.0000	26.0000	61.5556	2.8333		
Very High	N	4	4	4	4	4	4	
	Mean	10.5000	22.2500	33.5000	66.2500	2.0000		

There is little evidence that venture capital firms in Singapore and Hong Kong allocate more time to higher technology businesses. However, a noticeable pattern, shown in Table 8.5, is of venture capital firms allocating less time to medium technology companies and more time to companies at both ends of technology spectrum. Linked to that is comparatively more reliance on formal reporting in the case of medium technology companies. There is also little indication of any

significant relationship between stage of portfolio company development and the allocation of time to it by the venture capital firm.

8.2.2 The Extent of Involvement- Activities

The data gathered for the purpose of testing proposition 2 and 3 provides detailed information about the extent and focus of involvement activities of venture capital firms in Singapore and Hong Kong. On a five point Likert intensity scale, where a score of 1 represented no involvement and a score of 5 represented 100% of the activity being undertaken by the venture capital firm, the average level of intensity for all activities was 1.8, indicating low levels of involvement. More than 90% of venture capital firms have reported average activity levels of less than 3, a score representing as much contribution as the portfolio company.

The cluster analysis reported in Table 8.6 reveals three clusters of venture firms grouped by time and activities. The clusters were not as clear as the division determined by Macmillan et al. (1989), on either time or activities alone but became more obvious when the variables were combined.

8.6 Cluster Analysis: Time allocation and activities

Initial Cluster Centres

	Cluster 1	Cluster 2	Cluster 3
Total Direct Contact Time per Year	112.00	60.00	8.00
Average of Activity	1.87	3.27	1.13

Iteration History

Iteration	Change in ClusterCenters1	Change in ClusterCentres 3	Change in ClusterCentres 3
1	11.259	2.998	14.562
2	3.254	4.988	4.580
3	.000	2.515	.875
4	.000	.000	.000

a Convergence achieved due to no or small distance change. The maximum distance by which any centre has changed is .000. The current iteration is 4. The minimum distance between initial centres is 52.019.

Final Cluster Centres

	Cluster 1	Cluster 2	Cluster 3
Total Direct Contact Time per Year	97.50	64.63	28.00
Average of Activity	2.48	2.62	1.86
Number of Cases in each Cluster	10.000	8.000	17.000

Although the cluster analysis of time spent and average of activities exhibits a direct corresponding relationship between these two variables, it also highlights the heterogeneity of venture capital firms in terms of the time spent and levels of involvement in activities with the portfolio companies. Table 8.6 shows three clear clusters of venture capital firms. One apparent class of venture capital firms operates within a limited time allocation. This group includes venture capital firms whose average participation in any activities is rather limited. These can be termed hands-off venture capital firms and can be compared to Macmillan et al.'s (1988) *laissez-faire* group. The second cluster's comparative low time allocation is accompanied by high involvement and they can be identified with Macmillan et al.'s (1988) *close-tracker* group. The third cluster of venture capital firms is more difficult to define. This cluster shows a stronger relationship between time allocation and level of involvement in activities (averaged). Thus, they seem to adjust the time according to their participation in different activities. It is highly probable that this group is involved in the portfolio company on a case-by-case basis.

It is interesting to note that none of the venture capital firms in the survey added to the list of 15 activities that they were being asked to rate. This means that either venture capital firms are not involved in other activities or their involvement in other activities is minimal or they prefer to keep their other activities confidential. There is a marked similarity in the kind of activities in which venture capital firms are involved in Singapore and Hong Kong. Typically the venture capital firms' most important area of activity in these countries, besides monitoring, relates to their common area of expertise i.e. equity financing. It is obvious from the study of comparative

ranking, that although some research studies (Gorman and Sahlman, 1989; Elango et al., 1995) have treated obtaining finance as a single activity, venture capital firms continue to attach more importance to assisting portfolio companies in obtaining equity rather than debt finance. Apart from obtaining equity finance, a very important contribution from venture capital firms is crisis management. Most previous research studies did not rank this activity. The activities with the least reported involvement are in personnel management and operations. A comparison of this research with other studies shows that venture capital firms in Singapore and Hong Kong attach more importance to the function of monitoring than any other activity.

A Wilcoxon-Mann-Whiney rank sum test⁷⁶, as shown in Table 8.7, was performed to find out any significant difference between the means of the score that indicate venture capital firms' involvement between Hong Kong and Singapore.

⁷⁶ This test is used to determine the difference in ranking between two independent samples drawn from two populations. In this case Singapore and Hong Kong.

8.7 Test Statistics

	Mann-Whiney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)	Exact Sig. [2*(1-tailed Sig.)]
Personnel Search	94.500	370.500	-2.597	.009	.018
Interview and Selection	138.000	414.000	-1.110	.267	.314
Negotiation of Terms with Prospective Candidates	170.500	446.500	-.069	.945	.953
Development of Professional Support Groups	95.500	371.500	-2.617	.009	.020
Personnel Motivation	136.000	412.000	-1.178	.239	.286
Personnel Replacement	162.500	282.500	-.357	.721	.768
Formulation of Initial Business Strategy	139.500	415.500	-1.017	.309	.329
Ongoing Strategy Development	102.000	378.000	-2.163	.031	.035
Management of Crisis	128.500	404.500	-1.368	.171	.191
Development of Production Techniques	152.500	428.500	-.722	.470	.555
Selection of Vendors and Equipment	141.000	417.000	-1.197	.231	.359
Interfacing with Investor Groups	153.500	429.500	-.584	.560	.575
Obtaining Alternative Sources of Debt Finance	132.000	408.000	-1.258	.208	.235
Obtaining Alternative Sources of Equity Finance	131.500	407.500	-1.284	.199	.224
Monitoring Performance	143.500	419.500	-.920	.358	.391

a Not corrected for ties.

b Grouping Variable: Country

The results do not show a significant difference in involvement in most of the activities in Hong Kong and Singapore. However, venture capital firms in these countries differ significantly in their involvement in personnel search, development of professional support groups and ongoing strategy development.

Pandey and Jang (1996) found that venture capital firms in the Taiwanese market indicated involvement in hands-on activities, such as the internal management of the firm and product development. This finding is in marked contrast to the overall results herein. Since venture capital in Taiwan, Singapore and Hong Kong developed along similar lines in a similar period, why do the Taiwanese venture capital firms operate differently? The venture capital market in Taiwan derives a larger share of venture capital from corporations (AVCJ, 1999) than the venture capital market in Singapore or Hong Kong. Corporations tend to have more investee specific resources than independent venture capital firms (Chesbrough, 2000). Thus, corporations, which

provide funds to venture capital firms can become part of a network passing on resources to investees indirectly in unconventional areas.

The usefulness of activities that venture capital firms are involved in with their portfolio companies can be confirmed by determining whether these activities create any advantages for the portfolio companies. In order for their involvement or provision of resources to be useful, the activities need to qualify resource characteristics as specified in the resource-exchange model (Barney, 1991; Grant, 1991; Amit and Shoemaker 1993; Collis and Motgomery, 1995). However, the characteristics applicable to any particular resource depend primarily on the required resource-configuration of a business. This in turn depends on the industry in which a firm is operating and the event milestones⁷⁷ (Liechtenstein, 1997). Thus, the experience of the venture capital firm in the portfolio company's particular industry, as a resource, may not be equally valuable to venture capital firms operating across several industries. In Hong Kong and Singapore especially, the industries, in which venture capital firms invest are far more diverse than those in the United States⁷⁸. This diversity makes it more difficult for the venture capital firm to provide industry specific resources to all their portfolio companies.

⁷⁷ This may be the point of eligibility for the next financing round.

⁷⁸ In the United States, over 70% of venture capital is invested in only 3 basic industries. In Singapore about 70% of the venture capital is distributed between 6 industries and in Hong Kong between 4. (For detailed calculations see appendix II)

8.8 Classification of Activities: Principal Axis Factoring Rotated Matrix (Varimax with Kaiser Normalisation)

	1	2	3	4
<u>Financial/Strategic Activities</u>				
Obtaining Alternative Sources of Equity Finance	.803	.242	.244	.130
Interfacing with Investor Groups	.789		.168	.167
Monitoring Performance	.628		.189	.364
Obtaining Alternative Sources of Debt Finance	.595	.288	.403	.238
Ongoing Strategy Development	.550	.326	.247	.520
Formulation of Initial Business Strategy	.476	.647		.330
<u>Operations</u>				
Personnel Motivation		.898	.255	.156
Development of Production Techniques	.163	.666	-.291	
Management of Crisis	.248	.538	.290	.422
Selection of Vendors and Equipment		.499	.124	
<u>Personnel Hiring Decisions Activities</u>				
Interview and Selection	.324		.869	.104
Negotiation of Terms with Prospective Candidates	.359	.137	.644	
<u>Team Building Activities (Internal and External)</u>				
Personnel Search	.201	.107	.370	.832
Development of Professional Support Groups	.260	.113	.473	.503
Personnel Replacement	.112		-.142	.265
Eigenvalues	2.988	2.508	2.152	1.854

*Absolute values less than .10 suppressed

In order to confirm the results of the data collected for this study a rotated varimax analysis was conducted, as shown in Table 8.8. This was done in order to determine any clear pattern of involvement so that the results could be compared to MacMillan et al.'s (1988) findings. The same method of analysis has been used as used by MacMillan et al. (1988).

The first factor, financial/strategic activities, is similar to the patterns of involvement found by MacMillan et al.'s (1988). Since venture capital firms specialise in raising finance, channelling it toward strategically placed high return businesses and guiding these businesses through profitable operations, they are more likely to possess more complementary resources compared to other businesses. The second factor, operations, involved activities that are commonly associated with the operations of a business. Formulation of initial business strategy can be identified with both these categories given a high loading associated with both factors. Operational activities, except

for the selection of vendors and equipment, recorded the second highest involvement of the venture capital firms in their own rankings. The third factor involved management selection decisions like the interview of and negotiations with prospective candidates. The last factor represents the team building activities of their venture capital firms within their portfolio companies. This may involve eliminating non-performing personnel and searching for new members for the portfolio company's team. This factor supports the assertion by some researchers that venture capital firms play a vital role in assembling and developing a competent management team (Ehrlich, 1994; Stewart, 1989). Team building activities also involve cultivating relationships with outside organisations. While not matching all modes of involvement considered by MacMillan et al.'s (1988), is study of activities undertaken by Asian venture capital firms produced similar results in regard to financial activities and management selection activities. The noticeable differences occurred in what MacMillan et al. (1988) classify as development/operations activities and personnel management activities. It seems that venture capital firms in Hong Kong/Singapore are not involved with their portfolio companies in the same way as those in the United States, at least in regard to these activities.

Table 8.9 shows the results of correlations based on the four factors found previously using principal axis factor analysis classifications of activities and the time allocated by venture capital firms to their portfolio companies. Table 8.9 makes it clear that a venture capital firm's greatest involvement is related to finance/strategy. A high correlation between financial/strategic activities and the time allocated by venture capital firms confirms then to any other. The correlation between need based activities and time allocated to portfolio companies is also significant although less so.

8.9 Direct Contact Time and Classification of Activities

	Financial Strategic Activities	and Need Activities	Based Personnel Activities	Hiring Team Activities	Building
Mean	3.0211	1.8632	1.6447	1.5965	
Std. Deviation	.9938	.6772	.6030	.6445	
Pearson Correlation	Total.501**	.367*	.107	.257	
Direct Contact Time per Year					
Sig. (2-tailed)	.002	.027	.535	.130	
N	36	36	36	36	

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 8.10 shows the results of allocation of time to their portfolio companies by venture capital firms and the average score of involvement in activities, placed against the stage of development of the portfolio company.

8.10 Time Allocation, Activities and Stage of Development of Portfolio Companies

Stage of Development	At Present Average of Activity	Total Direct Contact Time (Hours per Year)
Seed	2.27	86
Start-up	1.63	56
Early Expansion	2.44	56
Late Expansion	2.31	63
Mezzanine	2.12	100
Public Company	2.27	15
Turnarounds	1.20	8
Others	1.97	40
Total	2.17	59

It seems that venture capital firms allocate most of their time to portfolio companies that are at a mezzanine⁷⁹ financing stage. The nature of mezzanine financing suggests that the holding period for this mode of venture capital would be short. There is, thus, a possibility that venture capital firms are choosing to follow a “home run” strategy (Sapienza, 1994) in the case of mezzanine financing and consequently, allocate more time to companies at the mezzanine financing stage. A balanced combination of time and involvement activities seems to occur at the seed stage of financing. Venture capitalists are more involved with companies at the early expansion stage

rather than at start-up, although, time allocation is similar. Despite a lower commitment of the venture capitalists' time, the venture capitalists feel that their participation in the activities of public companies is considerable compared to other stages.

8.2.3 Extent of Involvement- Time Allocation, Activities and Value Added

In order to verify proposition 4 a question was included in the research questionnaire which asked venture capital firms about the usefulness of their interaction with their portfolio companies. Almost all venture capitalists believed that the interaction was useful. These results were also checked with measures of involvement. A strong positive correlation existed between the value of interaction, as perceived by venture capitalists, and their contribution as measured in terms of the number of activities and the time they spent with portfolio companies.

Past research studies in the United States have found that venture capital firms add the greatest value through board membership (Sapeinza and Timmons, 1989; Landstrom, 1990). The lack of correlation between measures of involvement and the number of board members representing venture capital firms (Table 8.11) shows that quantity in this case may not mean value-added. This finding does not negate the previous studies but does raise a question about how board membership adds value to the portfolio company. Time spent in formal meetings, at least in Asia, was also not significantly correlated with value adding activities. The cultural differences between Asian venture capital firms and the United States venture capital firms offer an explanation about why formal meetings, although popular with the foreign-trained Asian financiers, may not sit well with the psychology of Asian entrepreneurs. For venture capital firms in Asia, the Board meetings would appear to be directed less at tackling issues and more at reducing information asymmetry.

⁷⁹ Preparation for IPO stage

8.11 Correlations Spearman's rho

		Board Nominated Subject capital firm	Members-Total by Venture(hours)	Time of Formal Meetings (Hours)	Time of Informal Meetings (Hours)	Time of Telephone Time per Year
Total Time of Formal Meetings (hours)	Correlation Coefficient	-.051				
	Sig. (2-tailed)	.789				
	N	30				
Total Time of Informal Meetings (Hours)	Correlation Coefficient	-.161	.314			
	Sig. (2-tailed)	.403	.062			
	N	29	36			
Total Telephone Time per Year	Correlation Coefficient	-.164	.100	.388		
	Sig. (2-tailed)	.387	.554	.020*		
	N	30	37	36		
Average Score of Ratings of Activities	Correlation Coefficient	-.130	.293	.490	.473	
	Sig. (2-tailed)	.495	.078	.002**	.003**	
	N	30	37	36	38	

** Correlation is significant at the .01 level (2-tailed).

* Correlation is significant at the .05 level (2-tailed).

8.2.4 What triggers Involvement?

Venture capital firms seem to be unimpressed with local traditions and practices relating to involvement. This raises many questions. Is it because their reading of the venture capital culture, relating to involvement, is incorrect? Is it because all venture capital firms operate differently at different levels of participation? Or, is it because they would like to be seen as different from others? It is difficult to conceive that with the extent of networking with competitors that goes on in this unique business (Bygrave, 1987), venture capital firms will be unaware of the involvement culture. It is also unlikely, as some convergence in the data collected by this study shows, that all venture capital firms operate at significantly different levels of involvement. The research data shows a standard deviation of .97 on a 1-5 Likert scale measuring intensity of involvement, which is not significant under these circumstances. One explanation of the venture capital firms' comparative difference on cultural readings can be ascribed to the comparative lack of contact or networking in the Asian market with local companies. This may be because venture capital in Asia is more outward looking and international in nature than in the United States.

Findings in this study have confirmed the earlier results of MacMillan et al. (1989) regarding the profound influence of the prior policy of venture capital firms on their later involvement in a portfolio company. The spread of responses regarding the venture capital firms' policy of involvement makes interesting reading. More than 3/4^{ths} of the respondents reported a close or very close involvement in their portfolio company as a matter of firm policy. There is a significant correlation ($r=0.634$, $p<01$) between their stated policy and their assessment of involvement in the companies that they reported on. However, close or very close involvement does not seem to translate into time actually spent with portfolio companies when compared to the time venture capital firms in the United States spend with their portfolio companies. In Hong Kong and Singapore, involvement may carry slightly different connotations. Why venture capital firms see themselves as closely involved may have to do with cultural settings and the institutions that they are comparing themselves with. Venture capital is still a new concept in these markets. Traditionally, entrepreneurs have relied on funds from friends, relatives and banks. In these modes of financing, investors do not usually get involved. Thus when the venture capital firms in these markets report close involvement, they are comparing venture capital with traditional modes of financing.

8.12 Multiple Factors as predictors of Involvement

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.421	.177	.018	1.12

a Predictors: (Constant), Number of Investments at present, Avg years of Experience-VC Industry, Number of Lead Investments, Avg. Experience Other Industries, Years Firm has been in Venture Capital Business, Average Amount of Capital Under Management

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	8.323	6	1.387	1.113	.378
Residual	38.651	31	1.247		
Total	46.974	37			

a Predictors: (Constant), Number of Investments at present, Avg. years of Experience-VC Industry, Number of Lead Investments, Avg. Experience Other Industries, Years Firm has been in Venture Capital Business, Average Amount of Capital Under Management

b Dependent Variable: Your Company Involvement

	Unstandardized Coefficients	Std. Error	Standardised Coefficients	t	Sig.
(Constant)	4.650	.982	Beta	4.734	.000
Years Firm has been in Venture Capital Business	-3.830E-02	.042	-.181	-.911	.369
Average years of Experience-VC Industry	-6.520E-02	.084	.162	.780	.441
Average Experience Other Industries	-3.303E-02	.057	-.106	-.581	.565
Average Amount of Capital Under Management	-8.315E-02	.118	-.148	-.702	.488
Number of Lead Investments	2.340E-02	.063	.066	.368	.715
Number of Investments at present	-.140	.126	-.228	-1.116	.273

a Dependent Variable: Your Company Involvement

Since firm policy regarding the involvement of venture capital firms proved to be a very important factor in later involvement, possible links between firm policy and other parameters that may have an effect on firm policy were explored as shown in Table 8.12. Firm policy relating to the extent of involvement with portfolio companies seems to be independent of all parameters of experience that have been measured. Neither years of experience nor the size of venture capital firm appears to have an impact on the policy decision about levels of involvement with portfolio companies.

Table 8.13 details the involvement policy of venture capital firms according to their type of ownership structure. Because of a smaller number of responses, a conclusion cannot be drawn in all cases. However, the number of responses in the case of independent firms, corporate subsidiaries and subsidiaries of financial institutions are large enough to draw a tentative conclusion. A lower mean score in the case of subsidiaries of financial institutions indicates that they have a policy of lower levels of involvement compared to independent firms and corporate subsidiaries. The reason is inherent in their traditional debt-financing role, which is basically collateral based, and tends to be hands-off.

8.13 Involvement policy, industry reading and type of Investment Firm

Type of Investment Fund		Your Involvement	CompanyGeneral Trend in the Industry
Government Sponsored	Mean	3.00	3.50
	Std. Deviation	.00	.71
Corporate Subsidiary	Mean	4.33	2.83
	Std. Deviation	.52	.75
Subsidiary of a Financial Institution	Mean	3.80	3.00
	Std. Deviation	1.14	1.05
Subsidiary of a securities firm	Mean	4.00	2.00
	Std. Deviation	.	.
Independent Company/Partnership	Mean	4.29	2.94
	Std. Deviation	1.10	1.09
A Joint Venture Company	Mean	2.00	2.50
	Std. Deviation	1.41	.71
Total	Mean	3.97	2.92
	Std. Deviation	1.13	.97

8.2.5 Resources Assessment, Involvement and Value-added

The information produced by testing of basic assumptions about the Singaporean and Hong Kong venture capital market (propositions 1-4) when combined with the data produced by testing the research model propositions (5-10)⁸⁰ shed more light on involvement mechanism of venture capital firms in these countries.

⁸⁰ as explained in chapter 4 (Figure 4.3)

There seems to be a pattern in the areas where venture capital firms consider themselves superior to their portfolio companies. These include finance, strategy, monitoring performance and crisis management. These are the same areas identified by factor analysis. There is some evidence to support the view that venture capital firms are more involved in those where they consider their strengths to be greater.

Venture capital firms, because of the size of capital under management and the services of professionals at their disposal, have reasons to feel confident about their resource strength. The lack of correlation between their perceived resource strengths and their size as measured by capital under management and number of professionals working for them (Table 8.14), discounts the impression that a larger size or more professionals means a larger pool of resources useful to portfolio companies. After these findings, the results on the relation between the number of investments and resource strength was as expected.

It is pertinent to note that only those resources have been assessed which are usually passed on to the portfolio company by the venture capital firm. This set of resources may be special. One of the venture capital firms, in its correspondence, has suggested that they "...built an investment team with this [value added potential] in mind"⁸¹. In order to find out whether firms consciously accumulate resources, a zero order correlation was calculated between firm policy, firm experience and the perceived strength of venture capital firm resources. No significant results were obtained.

8.14 Correlations (Spearman)

		Venture Capitalists' Assessment	Avg. Experience-Other Industries	Avg years of Experience-VC Industry
Avg. Experience Industries	Correlation Coefficient	.255		
	Sig. (2-tailed)	.122		
	N	38	39	
Avg years of Experience-VC Industry	Correlation Coefficient	-.035	-.368	
	Sig. (2-tailed)	.833	.021	
	N	38	39	
Your Involvement	Company Correlation Coefficient	.008	-.183	.125
	Sig. (2-tailed)	.961	.271	.454
	N	37	38	38

The lack of relationship results in the case of experience may indicate that this set of resources are not consciously accumulated or do not automatically get accumulated over a period of time within a venture capital firm.

Venture capital firms that possess more resources logically should be more involved with their portfolio companies. If perceived resource strength is related to experience in other industries, it should also be related to involvement. However, the statistical results do not favour this premise. In fact the relationship between experience in other industries is negatively related to the time that venture capital firms spend with their portfolio companies ($r = -0.368$, $p < .05$) and negatively related to the intensity of involvement in different activities ($r = -0.304$, $p < .10$).

Venture capital firms in Singapore and Hong Kong do not rate portfolio company resources lower when they are pursuing high technology, for good reason. Technology in Asia has a different connotation than in the United States. In the United States, the technology being adopted by the portfolio company may be completely new or untried, adding to the risk factor. As opposed to this, most of Asian high technology is an adaptation, and hence carries far less

⁸¹ Comments by a venture capitalist (Identity: Confidential). August 23, 2000: Personal correspondence record

risk. Why venture capital firms perceive reputation as an indicator of the resource strength of the portfolio company is also evident. Reputation is embedded in the past as opposed to competency. It represents the accumulation of resources backed by a successful track record in using these resources. Although managerial competency may provide confidence to the venture capital firms in terms of the future of the portfolio company, venture capitalists have reason to be more comfortable if entrepreneurs have prior standing in the industry. A zero order correlation between perceived reputation and all resources shows that venture capital firms associate it with almost all resources, but more so to those resources which relate specifically to the industry of the portfolio company. These include operational planning, industry knowledge and number of contacts in the portfolio company industry. This result is worth comparing to an earlier finding, which was that the venture capital firms are more confident about their resources when they have experience in the portfolio company industry. Thus relevant industry experience is much more important than other resources for venture capital firms in Hong Kong and Singapore.

It is interesting to note that venture capital firms in Asia rate portfolio companies much higher in terms of their resource strength, for their contacts with companies in other industries. As explained in Chapter 2, business in Hong Kong and Singapore is dominated by Chinese family businesses. The Chinese family business network, which taps social network based on kinship, common dialect, trade associations, education etc, is more pervasive and venture capital firms are unlikely to match them in number of contacts.

The relationship between resource gap and higher participation in an activity is difficult to define. Part of the problem stems from the fact that although venture capital firms participate in areas of high resource strength they do not see themselves significantly better off than the portfolio companies in these areas (except in the case of financial expertise). An indication of why that

happens is the low ranking venture capital firms ascribe to their industry knowledge vis-a-vis the portfolio company and the impact this has on their perception of the usefulness of almost all resources. This fact has been corroborated by a venture capitalist who stated “ There is no way that a VC can understand the business as well as the CEO. Otherwise, if we have this situation, the VC shouldn’t have invested in the company anyway”.⁸²

There are resources in which venture capital firms perceive themselves to be better equipped than their portfolio companies and resources in which they perceive the strengths of portfolio companies to be stronger than those of the venture capital firms. Thus a resource “gap” can be two sided. It is quite clear that venture capital firms’ high participation activities are not the result of a resource gap or need/availability match. It seems that venture capital firms, at least in Asia, are less prone to involvement in activities/resource areas in which they perceive portfolio companies to be strong. Thus perceived inadequacy in the portfolio company does not always result in higher participation although adequacy (or strength) diminishes venture capital firm’s involvement. The venture capital firms seem to be very conscious of the fact that their area of expertise is finance and they will be more useful to portfolio companies by advising them on financial matters. It seems, understandably, that the venture capital firms are also well aware that their industry knowledge is never a match for the knowledge of the portfolio company. However, they feel more resourceful if they have more relevant industry experience. This is reflected in the tendency of venture capital firms, as pointed out earlier, to specialise in industries and technologies.

⁸² Mr. Godwin Pon, Investment Manager, Agri-food Equity Fund . April 4, 2001: Personal correspondence record.

8.3 Summary of Findings

As hypothesised, it was found that venture capitalists in Singapore and Hong Kong allocate less time to portfolio companies than do venture capitalists in the United States. However, the overwhelming reason for this is not resistance by the entrepreneur, as hypothesised, but time restrictions on the part of the venture capital firms. Although the results are not significantly different, venture capitalists in Hong Kong spend more time with their portfolio companies than venture capitalists in Singapore. Venture capitalists in both these countries spend about 60% of their direct contact time with the portfolio company management in face-to-face contact and the rest through the telephone. It was also found that informal methods, like telephone calls and informal meetings, constitute more than three quarters of the direct contact time. Formal reporting occupies the least prominent role in venture capital involvement. Overall, Asian venture capitalists do not allocate more than 5% of their time to involvement activities. It was found that venture capital firms do not use modes of involvement as a substitute for each other. It seems, from the research data, that venture capitalists with more experience in venture capital rely more on telephonic contact whereas venture capitalists with experience in the industry of the portfolio company prefer face-to-face contact. It was also found that direct contact is greater in the case of companies pursuing medium technology rather than high or low technology.

The second proposition, where it was suggested that venture capital firms are involved in similar activities with their portfolio companies regardless of country, found support. The fact that no venture capital firm has added to the list of activities in the questionnaire would indicate that other activities, not already identified through previous research, are not important. Unlike most of the previous research studies, crisis management was added to the list of involvement activities in this study and it was found that venture capital firms in Hong Kong attach high importance to

this activity. Overall, it seems that the involvement activities have not been significantly affected by differences in cultures.

It was found that venture capital firms in Singapore and Hong Kong rank the importance of involvement activities similarly to the ranking provided by venture capital firms in the United States. The notable difference is that, unlike venture capital firms in the United States, monitoring performance is the highest priority area of involvement. Unlike other research studies, little indication was found of any cluster formation regarding direct contact time. However, the data shows cluster formation within these countries if it is analysed on a two dimensional (time allocation and involvement in activities) basis (Table 8.6). Apparently, there are Asian venture capitalists with a clear and relatively firm idea of how much time to allocate to portfolio companies.

It was found, through principal axis factoring analysis, that some involvement activities are related to each other and can be classified accordingly. These are finance and strategy, team building, personnel hiring and other general activities, which are related more to the operational side of the business. It was found that venture capital firms are most involved in activities related to finance and strategy. This is followed by their involvement on the operational side of the business. Their participation in team building and personnel hiring activities seems to be of lesser importance. It was found that venture capital firms in Singapore and Hong Kong allocate more time to portfolio companies at the mezzanine stage of financing. However, their involvement in activities is greater in portfolio companies at earlier stages of financing.

It was found that venture capital firms see themselves as adding value to their portfolio company through interaction. It was found that the number of venture capitalists on the board of directors of the portfolio company has no relation to their involvement activities. Formal meetings occupy

only one quarter the time that the venture capital firms spend in direct contact with their portfolio companies.

It was found that the intention of the venture capital firms to participate in the portfolio company is not affected by the practices of their counterparts in the venture capital industry. Similarly higher comparative stakes in a portfolio company do not necessarily mean that the venture capital firm will be more actively involved. Venture capital firm policy was the only factor which was correlated (positively) to a willingness to interact with portfolio companies. Although this result does not affect the fundamental validity of the proposition that involvement depends, to some extent on willingness to be involved, it narrows down the possible factors. While testing this proposition, it was found that most of the venture capital firms in Hong Kong and Singapore see themselves as closely or very closely involved with their portfolio companies and that this is a matter of policy. They are also very likely to abide by their stated policy. Firm policy shows little relation to experience or size of the venture capital firm, as measured by number of professionals and capital under management. Since it was not the focus of the research, the question about what guides firm policy cannot not be pursued. However, it was found that subsidiaries of financial institutions have a policy of lower levels of involvement compared to independent venture capital firms and corporate subsidiaries.

While exploring the resource need/availability premise, it was found that the resource assessment of venture capital firms, of their own resources, shows far less variation than their assessment of portfolio companies. Venture capital firms assess their own resources differently from the resources of their portfolio companies. However, resources like expertise in crisis management, performance monitoring, project/idea evaluation and strategy planning show similar assessments.

A noticeable characteristic of these resources is their non-specific and general nature, within the context of venture capital/portfolio company relations.

It was found that from the perspective of the venture capitalist, the portfolio company's need for particular resources does not depend entirely on risk factors. Thus, risk relating to the complexity of technology is not affected by resource strengths in these areas. There is sufficient evidence that competency of the portfolio company management, in the eyes of venture capital firms, also does not affect the venture capitalists' perception of the portfolio company's resource strength. Thus, resources and the capacity to use them competently are perceived to be different. However, venture capital firms are more likely see resource weakness if the portfolio company is new, the management team is not reputed or if the company is not performing well.

It was found that the venture capitalists' perception of their own resource strength does not depend on either the size or experience of venture capital firms in the venture capital industry but is impacted by their experience in other industries. Where this experience exists the venture capital firm is perceived to have greater resource strength. It is hard to avoid the impression that venture capital firms are in the best position to add value if they have professionals with experience in industries other than venture capital. However, little relation was found between higher resource assessment and measures of value added. Thus, resource transfer from the venture capital firms to the portfolio company does not depend on the perceived resource strength of venture capital firms.

Although the validity of the proposed resource-exchange model was only partly supported, this research has highlighted many aspects of a value-added relationship between venture capital firms and their portfolio companies. The next chapter concludes this thesis. Areas in the existing

literature in which a contribution has been made are described. Possible directions that any further research on this topic may take are also suggested.

9 Chapter 9: Conclusion and Further Research

9.1 Conclusion

Through this study insight has been provided into how the resource exchange relationship affects the involvement of venture capital firms in their portfolio companies. Prior work has been extended in at least three directions:

- 1) By choosing to conduct this study in Asian markets, the nature and effect of venture capital firms' involvement across a largely unexplored territory has been described. This research has added to a very limited literature on Asian venture capital.
- 2) Previous studies have examined the effect of isolated factors on the value-adding role of venture capital firms. Throughout this study an attempt has been made to classify, integrate and develop a model that not only accommodates previous findings but also sets up a logical relationship between findings.
- 3) Resource exchange theory has been identified as a potential vehicle to explain the value-added relationship. In order to tackle the question of whether venture capital firms add value to their portfolio companies a three-dimensional model was put forward in this thesis. These three dimensions include the characteristics of venture capital firms/portfolio companies, the characteristics of relationships and the characteristics of resources. The focus of this research has been on the characteristics of venture capital firms/portfolio companies in terms of their interrelationships and resources.

While it is true that little dragon economies are diverse, a review of the venture capital subset of the market suggests that there are certain common features. The view expressed by Hofstede (1984) that cultural factors significantly affect the conduct of business has been supported by the research undertaken for this thesis. The common features of Asian venture markets may be the result of shared cultural norms. Geographical proximity may also have explained similarities in the venture capital markets in Asia. Another reason is that Asian markets, in general, began to develop institutionalised venture capital markets later than the United States and Europe and consequently, still have the common features of a developing venture capital market. Venture capital, in almost all little dragon economies, has been taken up as a development tool. Governments have played a large role in developing these markets and, during the process, influenced the direction, composition and structure of the industry. There are unique features to these venture capital markets due to their environments. Because of the initial active role of the government in the development of the industry in Asia, venture capital definition is closely linked to the government's perception and sometimes even defined by it. Most of the venture capital funds within little dragon economies are derived from different sources than those relied upon in the west. There are still large untapped sources of venture capital funds in Asia such as banks (as in Europe) and pension funds (as in the United States). Another salient feature of venture capital in most of these countries is the focus on infrastructure for development rather than high-tech innovations, as in the United States, and consumer goods, as in Europe (Rausch, 1998; EVCA, 1998). Because of the higher risk generally associated with the Asian environment,⁸³ venture capital firms are inclined to exit their investments quickly. Another feature of these markets that was found particularly important is the expertise available to venture capital firms. It appears that

⁸³ As the Asian crisis displayed.

venture capital firms, in most of Asia, are in the process of acquiring skills in related areas like leveraged buy-outs.

As for venture capital governance, venture capital firms in Hong Kong and Singapore clearly rely much more on informal methods of communication such as telephonic and informal meetings rather than formal meeting and reports. The exceptionally small role of formal reporting in venture governance by venture capital firms in Hong Kong and Singapore was also highlighted in this thesis. A reason generally put forward for less reliance on formal reporting is that accounting reports tend to tie down early stage businesses, which is in contrast to what is required (Hayes and Abernathy, 1981). The fact that accounting practices in Singapore and Hong Kong are still developing, may also have added to this tendency.

The research has corroborated the fact that venture capitalists in Singapore and Hong Kong spend less time with their portfolio companies, compared to venture capitalists in United States. Many theoretical reasons were offered for the justification of development of this hypothesis. The result of the survey has disproved some of the assumptions. For example, the findings that portfolio company resistance for lesser involvement of venture capitalists rules out the possibility of cultural factors or the importance of family owned business and dilution. This leaves very few explanations and reinforces the point that low involvement of venture capitalists may be because venture capitalists in these markets are not ready or equipped for more involvement. While there has been no longitudinal study which compare venture capitalists' involvement, in the light of these results it is probable that venture capitalists involvement in portfolio companies increases as the venture capital industry matures.

Previous researchers in the United States have made it clear (MacMillan et al., 1989), and this researcher has also found it true in the Asian context, that venture capital firms vary in the extent

of their involvement with portfolio companies. If the decision to be involved is pre-set in the company's policy, it is more likely to be adhered to. Although the reasons for policy differentials were not pursued, it seems highly improbable given the lack of correlation between perceived industry practices and firm policy, that it is influenced by general trends in the venture capital industry. Rock (1991) stated that venture capital firms who adopted a hands-on approach believed that in order to maximize the chances of portfolio company's success and consequent high returns on their investment, involvement was necessary.

It has been highlighted in this thesis that there is a marked similarity, at international levels, regarding the areas in which venture capital firms are involved. The importance that venture capital firms attach to involvement activities also shows a similar pattern as revealed in research conducted in other countries.

Past research has been less than convincing regarding the effect of business risk, as expressed by the complexity of technology and stage of portfolio company development, on the ability of venture capital firms to add value to portfolio companies. From the resource-based viewpoint, technology and stage of portfolio company development seem to have little impact on the venture capitalist's perception of the resource-pool of the portfolio company. However, the reputation of the portfolio company does bear a significant weight in the resource perception of the venture capitalist. Because the perception of greater resource strength increases the expectations for successful results, reputation may well be associated with less risk among venture capitalist's in Hong Kong and Singapore.

This study has demonstrated that there are differences between the resource pools of firms. The resource pools of firms within an industry are likely to exhibit a similar composition and pattern. The difference in resource composition can provide a useful theoretical basis to capture the

relationship dynamic between businesses. As firms strive to increase their pool of resources they set-up network links with potential sources of supply. The nature of subsequent relationships will be affected by resource composition, the intensity of need and the willingness of the concerned parties to share the resources.

On the basis of the arguments put forward in Chapter 4, it seemed improbable that venture capital firms with adequate resources would not get involved with their portfolio companies. Some venture capitalists indicated that value-added was a question of resource strength. "VCs (venture capitalists) add value in many ways depending on their team competencies and on the contract between VC (venture capitalists) and the investee."⁸⁴ Contrary to expectations, the findings of this project indicate that the competency or resource strength of the venture capital firms has little to do with their involvement in different activities. This finding is linked with another result; that is that venture capital firms do not consciously accumulate these resources for the purpose of involvement. Thus, even those venture capital firms with an overall larger resource pool, may not be anymore inclined to get actively involved in their portfolio companies. Even where venture capital firms believe their portfolio companies to be inadequate in a particular resource⁸⁵ they do not necessarily pick up that activity. By default, finance remains the most likely area in which venture capital firms will participate in their portfolio company and be of use to the portfolio company. Bygrave and Timmons (1992) reported that a venture capital firm indicated that venture capitalists spend greater energies on making the good great rather than making a dismal poor. The above findings seem to be indicating that venture capitalists' involvement are influenced more by characteristics of the portfolio company rather than their own

⁸⁴ Comments by Jane Crawford, Managing Director, 3I plc South East Asia, Singapore via Email.

The pattern of venture capital firms' involvement in their portfolio companies in Hong Kong and Singapore is fairly similar. It seems likely that this pattern extends to most of the Asia-Pacific, if not the whole of Asia. The time allocated to involvement activities in these countries is much smaller compared to a successful venture capital market like the United States. Since it was concluded, from this research, that the resistance from entrepreneurs is not a likely reason for low levels of involvement; the constraints must be imposed by venture capital firms. There is a lot of room for expanding frequency of interaction and time allocation if value-added is a desired objective, because some researchers believe that more interaction seems to result in greater value added (Sapienza and Gupta, 1994; Sapienza, 1992).

The implication of this line of reasoning is that venture capitalists in Hong Kong and Singapore interact less with their portfolio companies because of reasons embedded in the environment in which they operate. Two of which, as indicated earlier, are the comparative novelty of this concept and lack of experience in venture capital.

Researchers have suggested that portfolio companies should be careful in choosing their venture capital firm (Ehrlich et al.; 1994, Sapienza, 1992) because the value of the venture capital firm's involvement can vary significantly. It has been confirmed that portfolio companies do have a meaningful choice in selecting venture capital firms. The potential value added service is given as one of the reasons for portfolio companies to approach a particular venture capital firm (Smith, 1999) ⁸⁵. An implication arising from the resource exchange paradigm, as explained in this research, is that Asian portfolio companies who seek support in areas other than finance will be better off with venture capital firms that specialize in their same industry. Moreover, if a venture

⁸⁵ e.g. relevant industry experience.

⁸⁶ This research study has found that more than 71% of entrepreneur have admitted receiving more than 1 offer from a venture capital firm for financing, while more than half claim to have received three or more offers.

already possesses a particular resource its alliance with any venture capital firm who is accustomed to providing the same resource may not be useful in terms of exchange. Companies who do wish to obtain the involvement of venture capital firms should request information on the relevant involvement policy of those firms. Lastly, portfolio companies need to understand that value-added largely depends on their own initiative. A venture capital firm, which perceives the resource strength of a portfolio company as adequate, is unlikely to get involved in that portfolio company. Moreover, venture capital firm's resource capacity does not automatically mean that support will be offered to their portfolio companies. As with venture capital firms who intend to be involved, the real issue is not only finding partner who shares a perspective on resource strength, but is also willing to cultivate an exchange relationship.

This research highlights a possible direction that governments in Hong Kong and Singapore could consider while designing policies relating to the promotion of venture capital. Generally, Asian governments have played an active role in venture capital promotion. The involvement activities of venture capital firms are one of the most important attributes of venture capital, which sets venture capital apart from other modes of financing. It has been found that venture capital firms feel better equipped and more able to add value (exchange resources) when they have relevant industry experience. Thus existing individuals with industry experience seem to be a better source of future venture capitalists than those without such experience. Governments should target these individuals while creating venture capital development initiatives. More value creating venture capital firms can also be added by encouraging greater specialization among firms, based on particular industries. It has been found in this research, that venture capital firms place minimal reliance on formal reporting by portfolio companies. This may result in an information gap. Information asymmetry can be minimized through the establishment and enforcement of accounting standards and reporting procedures.

It is interesting to note that the areas which past studies have identified as primary contributors to the success of a high potential ventures (Maidique, 1986; Timmon, Smollen and Dingee, 1977; Cooper and Bruno, 1977; Meyer and Roberts, 1986) are not necessarily the ones in which venture capital firms in Asia report their highest activities. There are other factors, besides the involvement of venture capital firms, which can affect the efficiency of the venture (Chan, 1983; Berglöf, 1994, Adamati and Pfleiderer, 1994). Thus, the value that venture capital firms add through involvement is limited both in scope and effect. "What matters is that venture capitalists do not substitute for good full time executives"⁸⁷.

This thesis has demonstrated that the venture capital firm/portfolio company relationship can be seen as other than an agency relationship. Agency perspective analyses agency conflicts in isolation from other realities of the venture capital process. Information asymmetry, moral hazard or adverse selection does play a role in this relationship; however, agency theory takes away the focus from other characteristics of this relationship which are as important if not more so. Furthermore, it seems inappropriate to ignore a large number of venture capital practitioners who believe this relationship to be more than a principal/agent relation. The network dyad concept sees venture capital firms/portfolio companies as equal partners rather than in confrontational relations as the agency theory implies. It also recognises portfolio company relations with other venture capitalists and venture capitalist's relations with other portfolio companies/venture capitalists and the potential influences that these relationships can create on the dyadic relations. As suggested, the network dyad model not only captures the essence of this relationship but is ideally suited to a resource exchange perspective.

⁸⁷ Comments by Anil Thadani, Chairman, Schroeder Capital Partners (Asia) Pte Ltd via Email

This thesis sheds further light on how the element of risk is perceived in relation to the resource adequacy of a company. While it has been determined, as explained in Chapter 4, that the development stage of a company, the intricacy of technology being pursued by a company and competency of the management team is associated with risk, it was not found to be associated with perceived resource strength. The fact that company performance was strongly associated with the strength of resources more or less sets apart risk and resource pool. This means that at a practical level, perceived adequacy of resources may not necessarily mean that a business is more or less risky.

While the resource exchange paradigm seem to be an interesting angle to look at the inter-firm relationship, the classification and definition of resources can pose a serious problem to this process. As discussed in Chapter 4, resources have been classified differently which can have some bearing on the results of resource assessment and may produce different results. This may be the reason why few attempts have been made to analyse inter-firm resource exchange relations compared to relations at individual level. In the case of this thesis, this job was made easier by prior research studies which have already identified a limited set of activities/resources which could be worked with. Thus, at theoretical level, any practical research on resource based theory may provide a better result if the resources being exchanged are pre-determined. Nevertheless resources when assessed appropriately can become a powerful tool to explain the dynamics of a relationship and can add detail to the analysis of risk factor.

According to the resource exchange theory, the probability that resources will be transferred to others depends on the amount of resources possessed (Foa and Foa, 1980). The results of this research do not seem to corroborate this assumption. The explanation of this behaviour is a matter of conjecture. Foa and Foa (1980) have used this assumption in the case of individual

relations and it may not be possible to extend it to inter-firm relations. Secondly, the venture capital firm/portfolio company relation, as has been discussed in Chapter 4, does not neatly fit into more popular relationship with a well developed theoretical basis.

9.2 Limitations

Besides the general limitations associated with survey-based research, already cited in Chapter 1, this study has some specific limitations. Firstly, this thesis only examines the perceptions of the venture capitalists in terms of resource exchange. Although researchers (Sapienza and Timmons, 1989; Sapienza, 1992; Ehrlich et al., 1994) have not found significant statistical differences between the perceptions of venture capital firms and portfolio companies, regarding the value added and the activities that venture capital firms are involved in, it would be interesting to see whether this finding is relevant in the Asian context.

Another limitation of this study is that the venture capital firms/portfolio companies resources exchange relationship has been examined in a post funding state. It is quite possible that the portfolio companies whose resource needs are greater and which do not match the resource availability of the venture capital firm may have been selected out during the screening process.

The researcher has relied on cross-sectional data and, in terms of size of sample, this study has some obvious limitations. Although it seems to be an uphill task in an Asian market, a larger sample for the study of the resource-exchange paradigm could have added further validity to the findings.

In this kind of research study, it is difficult to overcome self-reporting because the nature of many of the variables employed precludes alternative sources.

Like any research study spanning a number of years, there is also a possibility of response error due to the time lag between the time of evaluation of data collected and the responses received.

Readers are urged to exercise the following cautions when comparing this study with others conducted in the United States and Europe. Firstly, the difference in the time period of the surveys may have caused differences in results, which are immeasurable. Secondly, there are language and cultural disparities that directly impact on the definitions and concepts used. These problems exist both in the case of primary and secondary data. Both these limitations are usually present in almost all cross-cultural studies. Since this is the first study of this kind in the Singaporean and Hong Kong markets, it is suggested that any future study should try and include variables to control for cultural differences.

9.3 Further Research

The findings in this thesis support the view that value added in venture capital can be seen as a function of resource exchange and that this can be a rich area for further research on inter-firm relations. This study can be extended further. Two more areas of research pertain to factors, which could not be analysed, because doing so would have made the questionnaire more complicated adversely affecting response rates and jeopardizing credibility. One of the two areas of research is the study of the relationship characteristics affecting a value-added outcome. Secondly, an exploration could be made of the characteristics associated with a resource/activity and any bearing these may have on the relationship between venture capital firms and their portfolio companies. It is suggested that relationship factors should be recognized separately, from the dimensions of resources and studied further. Similarly, the characteristics of resources being transferred should be considered in an industry scenario and their effect on performance noted. It would be interesting to find out differences in resource capabilities between the types of

venture capital firms, as assessed by portfolio companies. This issue would help us understand whether the type of venture capital firm makes any difference to value added as some suspect (Barney et al., 1996). While resource assessment by venture capital firms of portfolio companies has been examined in the context of portfolio companies' stage of development, Norton and Tenenbaum (1993) and Sapienza and Amason (1993) have suggested the exploration of a similar question to determine whether the type of assistance varies by the financing stage. The proposed research will help identify any pattern in the nature of resources that are being transferred in early stages as compared to later stages. Future research should also explore the resource capabilities of a venture capital firm as compared to other private equity investors. Do venture capital firms have an advantage over other private equity investors in terms of resource availability and does that translate into value addition?

An additional avenue for further research in to resource exchange in the venture capital firm/portfolio company dyad would seek responses from entrepreneurs whose venture failed. While it would be difficult to obtain such information, it will not only add further material to the resource exchange theory but may be helpful in isolating factors, which can result in failures. Further research could also explore the resource exchange dynamics within a portfolio company. What are the costs and benefits to a portfolio company of utilizing resources from venture capital firms rather than offsetting⁸⁸ these from existing resources or obtaining them from outside sources? If a robust resource exchange process occurs which favorably reflects on the resource pool of a portfolio company, does it in any way affect the long-term development of the company or cognitive development of an entrepreneur. If a particular resource is being exchanged freely, would that encourage companies to explore further areas of exchange?

⁸⁸ Strong resources support weak resources (Wernfelt, 1984).

Differential exchange relations could also reflect on the motivation of the entrepreneur or the management team.

Future research should determine to what extent the needs and the resource availability reflects on the *selection* of portfolio companies by venture capital firms. Does the resource need guide a portfolio company to approach a particular venture capital firm? Venture capital firms initially assess companies on the basis of their resources. Does information asymmetry on that score scare venture capital firms away from portfolio companies? Can portfolio companies reveal their resources/capabilities without jeopardizing the possibility of a relationship? It would be interesting to find out how different levels of resource assessment of the portfolio companies impact the terms and conditions of the formal contract. Finally, it would be worthwhile to follow venture capital firms/portfolio companies longitudinally to see how their resource exchange relationship changes over time.

Future research should determine to what extent the resource exchange perspective is an issue during deal evaluation and the negotiation process. Unfortunately, the research data, because of its size, does not allow analysis on this score. It could be a very important area of research with profound effects on policy issues.

The fact that most of the time venture capital firms co-invest (Bygrave, 1987) also makes a very interesting testing ground for resource exchange theory. How do venture capital firms differ in resource assessment of the same company? Do all co-investors, as regards resource contribution, offer the same level of support or do they differ according to their own resource perception. Are venture capital firms, who habitually choose to co-invest and do not assume a lead role in any way, mindful of the deficiency of their own resource pool?

There is a growing trend among venture capital firms to form what is known as “global networks”. It would be interesting to investigate whether cultural factors in any way effect the resource perceptions of venture capital firms within these networks. Similarly, does the required resource pool composition differ, in any way, across countries? Do venture capital firms experience difficulties or a variation in resource assessment prior to the funding of companies when they are from different countries?

Lastly and most importantly, this study has found that venture capital firms’ policy toward involvement in their portfolio companies has a profound effect on their actual involvement. The factors that shape the policy of a venture capital firm regarding its level of later involvement would make a very worthwhile research endeavor.

Most of the Asian venture capital markets are set to enter maturity during the first decade of this century. For Asians, it may be the period of realization and acceptance of venture capital as a viable alternative to traditional financing. The focus, thus, should also be on educating entrepreneurs. Asian venture capital, as has been seen, has evolved into a unique market. The US model of venture capital is neither viable nor existent in Asia. Asian venture capital will benefit more from further research being carried out in the Asian environment to yield a deeper understanding of the forces that drive this industry.

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10 Appendix I- Secondary Data Source

1. There have been some discrepancies in the data contained in *The Guide to Venture Capital in Asia, 1999* published by Asian Venture Capital Journal, Hong Kong. The data has been adjusted for these and the final results may not exactly match the data in the above guide. The details are.
 - a) AVCJ has rounded figures and therefore, the total in many cases does not exactly sum up. Since I have taken direct figures, all total are correct to the best of my knowledge and thus might differ slightly from AVCJ.
 - b) According to the AVCJ Directory, the seed and Mezzanine investment in Singapore is 3.6% and 24% receptively whereas according to Singapore government survey available on the net, it is 34% and 12% respectively. Following is the AVCJ response to explain the extent of discrepancy. "When we are talking about Seed, we mean the stage where initial concept of the business is being formed. From my knowledge, there is no way that Singapore could have 34% invested in Seed stage since it is the most risky stage among all. If the info is from EDB, they may have accounted Start-up and Early stage into that 34% figure. One reason why the EDB publishes the data so differently from ours is that they account only the funds that are raised in Singapore and invested in Singapore. For your information, Singapore firms get only about 10-20% of all fund raised locally."⁸⁹ AVCJ data has been used.
 - c) For reporting total venture capital pool in 1991 in Sri Lanka, AVCJ has used a currency conversion rate of SR79.50/USD. Historical records do not verify this rate. AVCJ claims that this rate is supplied by Sri Lanka government and cannot be wrong. For the purpose of this study a rate of SR42.53/USD has been used.

⁸⁹ Personal correspondence record

- d) On page 139 of the directory the Philippines' total pool for 1996 is reported P 4,372 million and new funds raised as P 920 million. This has been reported equivalent on page 25 to US\$166 and US\$ 47 respectively. If calculated the rate amount to P26.34/US\$ and P19.57/US\$ which are markedly different. As admitted by AVCJ this is an error and a conversion rate of P26.34/US\$ has been used for calculating new funds raised.
- e) The reason why Korean venture capital investment portfolio in 1997 is more than total venture capital pool has been explained by AVCJ as follows:- "As most of the foreign private equity investments in Korea are denominated in US\$ and Won had fell more than 50% during 1997, the accumulative portfolio become somewhat huge after converted into Won."⁹⁰
- f) On Page 92 of the directory the data depicted relating to investment portfolio in Japan 1991-1996 is erroneous. Instead, data supplied later by AVCJ directly to me has been used.
- g) The venture capital pool reported separately in USD Million for China and Hong Kong for 1997 is USD 3,500 Million and USD 9,632 Million respectively. The total comes to USD 13,132 Million whereas it is reported as USD 10,670 Million on page 28 when reported jointly. Similarly, new funds raised and annual investments in the separate country details when joined together do not produce the results indicated on page 25 for joint reporting. The AVCJ explains, " PE firms treated Hong Kong and China very differently from other countries in Asia. ... most Chinese investee companies here have businesses and investments in both China mainland and Hong Kong because of political and economical tie between the two places. To be most accurate, we have decided to run three different sets of survey - China (including SAR) as a whole, China mainland, and SAR. If you add China mainland and SAR together, the result is much larger than China as a whole due to overlaps of how

⁹⁰ Personal correspondence record

funds and investments. In other words, it's very difficult to break down the overall figure for China into two sets of data since the percentage is hard to estimate.”⁹¹ Due to his difficulty, I have taken up the figures reported separately for both China and Hong Kong and thus there might be some overlap in the figures.

- h) Unlike AVCJ, because of significant cultural differences, venture capital markets of Australia and New Zealand have not been included in Asia.
- 2. EVCA has presented its private equity data in ECU. In order to make it comparable with other data an exchange rate ECU/USD existing as on Dec, 31 of respective years has been used. It has been taken from the historical records maintained by Board of Governors of Federal Reserve Systems, USA, available on the Internet.
- 3. The data on sources of funds in case of Europe represent new funds raised 1997, in case of Asia total venture capital pool up to 1997 and in case of US sources of capital commitments. This data may not be strictly comparable but provides a good idea of sources of funds in respective regions.

⁹¹ Personal correspondence record

11 Appendix-II- Recalculated Data (AVCJ, 1998)

(USD Millions, unless specified otherwise)

Venture Capital Pool

	1991	1992	1993	1994	1995	1996	1997
China	184	878	1422	2384	3458	3612	3500
Hong Kong	0	0	0	0	0	8019	9632
India	93	113	149	243	281	784	1016
Indonesia	76	57	99	225	245	289	426
Japan	15352	16028	17750	17750	14851	11254	7722
Korea	1547	1629	1687	1902	2567	3224	1857
Malaysia	75	147	160	194	437	448	406
Myanmar	0	0	0	0	112	112	113
Pakistan	4	4	3	3	7	6	6
Philippines	16	26	58	85	123	166	169
Singapore	868	896	1013	1833	3164	3981	4468
Sri Lanka	8	16	20	49	64	67	71
Taiwan	412	470	508	562	696	1336	1913
Thailand	64	90	98	117	165	201	177
Vietnam	10	22	131	247	303	276	292
Total	18709	20376	23098	25594	26473	33775	31767

Calculated from AVCJ, 1999

New Funds Raised

	1991	1992	1993	1994	1995	1996	1997
China	16	583	677	898	1028	294	96
Hong Kong	0	0	0	0	0	621	1920
India	23	31	13	90	51	433	263
Indonesia	52	0	31	117	29	45	146
Japan	782	870	605	1951	1633	1582	1010
Korea	207	151	97	268	895	1041	291
Malaysia	39	71	23	20	228	9	20
Myanmar	0	0	0	0	69	0	0
Pakistan	0	4	0	0	0	0	0
Philippines	0	10	3	33	41	35	25
Singapore	54	42	307	631	1058	721	1167
Sri Lanka	0	5	6	19	19	8	6
Taiwan	50	28	66	45	154	420	570
Thailand	17	25	7	14	29	33	47
Vietnam	10	12	109	115	53	22	17
Total	1251	1831	1944	4202	5287	5262	5577

Calculated from AVCJ, 1999

Sources of Venture Capital-1997

	Corporations	Private Individuals	Pension Funds	Government Agencies	Insurance Companies	Banks	Reinvestments (C. Gains)	Others
China	54.0%	0.7%	13.7%	2.5%	11.2%	12.4%	0.5%	5.0%
Hong Kong	51.9%	3.5%	12.9%	1.0%	20.4%	4.6%	0.0%	5.7%
India	49.1%	10.2%	2.8%	6.6%	2.0%	15.2%	0.0%	14.0%
Indonesia	25.3%	6.3%	7.6%	23.6%	5.9%	11.6%	0.0%	19.7%
Japan	51.8%	1.8%	5.4%	2.9%	11.9%	13.1%	0.0%	13.1%
Korea	37.0%	3.1%	1.3%	10.0%	2.3%	8.0%	3.6%	34.7%
Malaysia	28.8%	0.6%	1.3%	48.2%	2.0%	10.5%	0.0%	8.6%
Myanmar	46.3%	0.2%	0.0%	20.2%	5.7%	12.8%	0.0%	14.8%
Pakistan	60.0%	15.0%	0.0%	5.2%	0.2%	15.0%	0.0%	4.6%
Philippines	50.3%	4.8%	0.0%	7.9%	0.0%	23.8%	0.0%	13.2%
Singapore	43.9%	5.9%	3.5%	8.8%	6.4%	22.0%	0.0%	9.5%
Sri Lanka	32.0%	9.1%	1.1%	1.6%	5.1%	47.8%	0.0%	3.3%
Taiwan	66.7%	16.6%	3.0%	3.9%	4.8%	3.0%	0.0%	2.0%
Thailand	38.1%	11.6%	6.1%	0.0%	6.9%	31.4%	0.0%	5.9%
Vietnam	29.1%	0.9%	23.8%	2.4%	7.1%	24.6%	0.0%	12.1%

Calculated from AVCJ, 1999

Annual Venture Capital Investments

	1992	1993	1994	1995	1996	1997
China	65	242	645	678	609	550
Hong Kong	NA	NA	NA	NA	1183	778
India	29	33	55	71	101	112
Indonesia	18	11	37	99	55	62
Japan	406	322	1754	1467	1429	992
Korea	111	111	443	745	1139	920
Malaysia	11	34	63	73	58	49
Myanmar	NA	NA	NA	15	27	0
Pakistan	0	0	0	0	0	0
Philippines	8	10	14	16	16	12
Singapore	120	186	236	240	461	388
Sri Lanka	3	6	8	5	7	5
Taiwan	61	148	132	216	429	643
Thailand	22	22	30	34	35	76
Vietnam	1	4	29	32	84	27
Total	854	1129	3446	3692	5632	4615

Calculated from AVCJ, 1999

Venture Capital Investment Portfolio

	1991	1992	1993	1994	1995	1996	1997
China	0	274	330	1071	1704	2273	2812
Hong Kong	NA	NA	NA	NA	NA	4076	4691
India	49	73	100	138	183	281	357
Indonesia	8	27	37	56	152	202	245
Japan	5305	6008	6219	9688	8286	7174	6412
Korea	1211	1268	1348	1522	1989	2752	2490
Malaysia	22	46	78	125	191	249	214
Myanmar	NA	NA	NA	NA	20	47	47
Pakistan	0	0	0	0	1	1	1
Philippines	10	19	24	39	46	60	49
Singapore	399	460	720	924	1124	1530	1574
Sri Lanka	0	9	12	21	25	29	30
Taiwan	297	352	488	417	587	905	1277
Thailand	22	49	70	84	116	133	155
Vietnam	0	1	5	34	66	150	163
Total	7322	8585	9431	14121	14490	19863	20517

Calculated from AVCJ, 1999

Venture Capital Investment by Stage- 1997

	Seed	Start-up	Expansion	Mezzanine	Turnaround	Buyout	Others
China	3.3%	21.8%	50.3%	4.1%	6.8%	12.3%	1.4%
Hong Kong	4.4%	34.5%	46.6%	2.4%	0.5%	10.0%	1.6%
India	9.1%	46.4%	37.8%	5.2%	0.4%	0.3%	0.8%
Indonesia	0.8%	6.3%	84.6%	5.0%	1.1%	0.9%	1.3%
Japan	2.3%	10.8%	50.7%	35.1%	1.1%	0.0%	0.0%
Korea	9.6%	19.8%	46.1%	15.0%	6.2%	3.3%	0.0%
Malaysia	0.0%	19.4%	42.3%	15.0%	0.0%	7.8%	15.5%
Myanmar	55.2%	39.9%	0.0%	4.9%	0.0%	0.0%	0.0%
Pakistan	0.0%	95.0%	5.0%	0.0%	0.0%	0.0%	0.0%
Philippines	0.0%	13.3%	69.6%	5.0%	0.0%	12.1%	0.0%
Singapore	3.6%	24.2%	44.4%	24.1%	2.1%	1.6%	0.0%
Sri Lanka	0.9%	67.9%	22.0%	4.6%	2.8%	1.8%	0.0%
Taiwan	7.6%	16.3%	50.3%	24.2%	1.1%	0.5%	0.0%
Thailand	1.6%	21.4%	53.4%	14.9%	7.0%	0.0%	1.7%
Vietnam	0.2%	37.5%	61.2%	0.0%	1.1%	0.0%	0.0%

Calculated from AVCJ, 1999

Disbursement by Industries- Amount

	Consumer Related	Computer Related	Electronics Related	Industrial Products	Medical/ Biotechnology	Communications	Energy	Transportation	Construction	Financial Services	Other Services	Other Manufacturing
China	355	52	123	375	31	34	277	322	689	21	75	458
Hong Kong	1,004	145	99	938	145	615	202	432	647	103	127	230
India	80	72	15	86	35	13	9	8	4	0	11	25
Indonesia	73	3	5	84	1	14	2	3	5	12	10	33
Japan	1,231	398	468	795	147	212	199	135	571	526	917	814
Korea	167	261	391	628	50	252	37	79	86	40	127	374
Malaysia	19	23	23	24	2	5	3	0	6	0	44	64
Myanmar	18	0	0	2	0	0	0	0	12	11	4	0
Pakistan	0	0	0	0	0	0	0	0	0	0	0	1
Philippines	9	8	0	2	0	10	0	1	5	6	7	2
Singapore	165	201	249	178	133	182	39	26	131	73	78	119
Sri Lanka	9	0	1	2	0	3	1	2	0	3	1	7
Taiwan	20	365	495	94	13	97	8	31	8	41	20	84
Thailand	29	4	14	24	3	14	0	0	38	2	14	12
Vietnam	50	0	0	0	7	0	0	1	49	25	2	30
Total	3,228	1,532	1,884	3,232	568	1,450	778	1,039	2,251	862	1,438	2,253

Calculated from AVCJ, 1999

Disbursement by Industries-Numbers

	Consumer Related	Computer Related	Electronics Related	Industrial Products	Medical/ Biotech.	Communications	Energy	Transportation	Construction	Financial Services	Other Services	Other Manufacturing	
China	52	8	26	59	7	7	37		34	41	5	21	30
Hong Kong	167	48	27	154	17	41	38		38	72	14	17	41
India	122	102	41	195	78	16	19		13	9	0	41	66
Indonesia	180	21	50	204	2	9	8		13	19	18	62	114
Japan	2242	821	968	1,368	200	253	284		189	979	663	1,358	1,200
Korea	151	226	254	526	100	170	31		31	58	26	84	211
Malaysia	26	15	21	22	4	3	3		0	5	0	30	37
Myanmar	3	0	0	1	0	0	0		0	4	2	1	0
Pakistan	2	0	0	0	0	0	3		0	0	2	0	7
Philippines	10	3	2	3		9	3		4	4	7	6	5
Singapore	77	169	147	79	92	81	7		14	34	27	47	72
Sri Lanka	38	5	2	9	2	7	2		4	4	8	5	28
Taiwan	16	289	375	77	20	96	15		6	6	27	13	114
Thailand	35	3	11	19	3	15	3		0	24	9	14	13
Vietnam	14	0	0	0	2	0	0		1	16	9	3	8
Total	3135	1,710	1,924	2,716	527	707	453		347	1,275	817	1,702	1,946

Calculated from AVCJ, 1999

Exits/Divestments						
	1992	1993	1994	1995	1996	1997
China	-209	186	-96	45	40	11
Hong Kong	Error	Error	Error	Error	384	163
India	0	0	16	10	2	1
Indonesia	-2	1	16	1	0	21
Japan	0	820	124	1286	1666	924
Korea	0	0	301	321	197	150
Malaysia	-13	0	20	7	2	1
Myanmar	Error	Error	Error	0	0	0
Pakistan	0	0	0	-1	0	0
Philippines	-1	4	1	7	2	2
Singapore	64	-64	98	72	68	113
Sri Lanka	-6	2	-1	0	1	2
Taiwan	0	0	203	31	112	123
Thailand	-4	0	18	1	17	6
Vietnam	0	0	0	0	0	14
Total	-171	948	700	1781	2491	1531

Calculated from AVCJ, 1999

	Capital Management/ Capital Fund	Under Investment/ Venture Project	Capital Management/ Professional	Under Investment/ Professional	
China		76.1	8.6	17.8	14.3
Hong Kong		105.8	7.0	22.6	11.0
India		24.2	0.5	4.6	1.6
Indonesia		9.3	0.3	2.1	1.2
Japan		32.0	0.6	4.2	3.5
Korea		14.5	1.3	4.4	5.9
Malaysia		21.4	1.3	7.7	4.0
Myanmar		37.7	4.3	11.3	4.7
Pakistan		2.0	0.1	1.0	0.2
Philippines		21.1	0.9	3.8	1.1
Singapore		75.7	1.9	13.1	4.6
Sri Lanka		7.1	0.3	3.1	1.3
Taiwan		25.8	1.2	5.9	3.9
Thailand		25.3	1.0	3.8	3.3
Vietnam		41.7	3.1	9.7	5.5
Total		40.5	1.2	7.6	4.9

Calculated from AVCJ, 1999

	Available Capital for Investment	Professional /Fund	Investment Portfolio/Fund	Percentage Relation Investment/Pool 1996
China	688.0	4.3	61.1	62.9%
Hong Kong	4,945.0	4.7	51.5	50.8%
India	659.5	5.3	8.5	35.8%
Indonesia	181.3	4.4	5.3	70.0%
Japan	1,309.2	7.5	26.6	63.7%
Korea	-633.8	3.3	19.5	85.4%
Malaysia	191.8	2.8	11.3	55.6%
Myanmar	66.0	3.3	15.7	42.0%
Pakistan	4.9	2.0	0.4	20.0%
Philippines	119.8	5.6	6.2	36.1%
Singapore	2,894.2	5.8	26.7	38.4%
Sri Lanka	41.3	2.3	3.0	42.9%
Taiwan	635.5	4.4	17.3	67.8%
Thailand	21.4	6.7	22.2	66.2%
Vietnam	128.0	4.3	23.4	54.3%
Total	11,252.1	5.3	26.2	58.8%

Calculated from AVCJ, 1999

	Percentage Relation Investment/Pool 1997	Projects per professional	Projects/ Fund	Average Expenses Per year (2.5%)	Available per Professionals
China	80.3%	1.7	7.1	1.9	0.4
Hong Kong	48.7%	1.6	7.4	2.6	0.6
India	35.1%	3.2	16.7	0.6	0.1
Indonesia	57.4%	3.5	15.2	0.2	0.1
Japan	83.0%	5.8	43.7	0.8	0.1
Korea	134.1%	4.4	14.6	0.4	0.1
Malaysia	52.7%	3.1	8.7	0.5	0.2
Myanmar	41.6%	1.1	3.7	0.9	0.3
Pakistan	18.9%	2.3	4.7	0.1	0.0
Philippines	29.2%	1.2	7.0	0.5	0.1
Singapore	35.2%	2.5	14.3	1.9	0.3
Sri Lanka	41.9%	5.0	11.4	0.2	0.1
Taiwan	66.8%	3.2	14.2	0.6	0.1
Thailand	87.8%	3.2	21.3	0.6	0.1
Vietnam	55.8%	1.8	7.6	1.0	0.2
Average	64.6%	4.1	22.0		

Calculated from AVCJ, 1999

12 Appendix III- Questionnaire

University of Wollongong
Department of Accounting and Finance

Name :

Address :

Telephone:

Fax:

Email:

Please Complete

All information provided by you will be kept strictly confidential.

Section 1

General Information1-1. Year this fund became operational 19 **1-2. Human Resource**

Number of Partners/Senior Management Personnel:

Nos.

Average Years of Experience of Partners/Senior Management Personnel
in the Venture Capital Industry:

Yrs.

Average Years of Experience of Partners/Senior Management Personnel
in Other Industries:

Yrs.

1-3. Rank by your preference for Stage(s) of development of your investees at the time of the initial investment (Please Tick ✓ and Rank)

θ Prefer

	Rank
Seed (Research and Planning)	
Start-up (Market Entry)	
Early expansion (Market Development)	
Late expansion (Market Exploitation)	
Mezzanine funding (Preparation for IPO)	
Public Company (self explanatory)	
Leveraged buy outs	
Turnarounds	

θ No Particular Preference

1-4. Average Amount of Capital under Management during the last one year. (Please Tick ✓)

θ Less than KRW10 billion

θ Between KRW 10-20 billion

θ Between KRW 20-30 billion

θ Between KRW 30-40 billion

θ Between KRW 40-50 billion

θ More Than KRW 50 billion

1-5 Yearly Average Percentage Return on Investment (Please Tick ✓)

Numbers	At present (Based on years of operations since inception)	Expected over next five years
Less than 20%		
Between 21-40%		
Between 41-60%		
Between 61-80%		
Between 81-100%		
More Than 100%		

1-6. Role as Lead Investor(Please Tick ✓)

Numbers	Total number of Investments (Since Inception)	Your role as Lead Investor
Less than 10		
Between 11-20		
Between 21-30		
Between 31-40		
Between 41-50		
More Than 51		

1-7 Board Representation (Please Tick ✓)

Numbers	Total Number of Investments (At Present)	Board Representation
Less than 5		
Between 6-10		
Between 11-15		
Between 16-20		
Between 21-25		
More Than 25		

Section 2

Involvement as a lead investor (Please provide the following information in relation to any portfolio company in which you are acting as lead investor. In case you are not acting as lead investor in any investment, kindly provide the following information about any one of your portfolio company of your choice)

Name of the Portfolio Company:	_____
Address:	_____
Phone No:	_____
Fax:	_____
Email:	_____

2-1. Year this company became operational : 19____

2-2. Total Assets (Please Tick ✓)

- | | |
|--|--|
| <input type="checkbox"/> Less than KRW 1-2 billion | <input type="checkbox"/> Between KRW 2-3 billion |
| <input type="checkbox"/> Between KRW 3-4 billion | <input type="checkbox"/> Between KRW 4-5 billion |
| <input type="checkbox"/> Between KRW 5-6 billion | <input type="checkbox"/> More Than KRW 6 billion |

2-3. The percentage of your share in the total equity (Please Tick ✓)

- ☐ Less than 15% ☐ 16-30% ☐ 31-45% ☐ 46-60% ☐ 61-75% ☐ More than 75%

2-4. Year Venture Capital Received First 19____

2-5. Company stage of development. (Please Tick ✓)

Stage of Development	When Venture Capital was first Received	At Present
Seed (Research and Planning)		
Start-up (Market Entry)		
Early expansion (Market Development)		
Late expansion (Market Exploitation)		
Mezzanine (Preparation for IPO)		
Public Company (self explanatory)		
Leveraged buy outs		
Turnarounds		
Other		

2-6. On the Scale of 1-5 where would you place this company in terms of technology?
(Please Tick ✓)

Very High Tech **5 4 3 2 1** Low-Tech

2-7. Composition of Board of Directors of the Company

Nominated by You	
Nominated by Other Venture Capitalists	
Nominated by Other Financial Institution	
Independent Board Members	
Others	
Total Board Membership	

2-8. Number and duration of meetings that you had with the Management/CEO of the Portfolio Company during the last one year :-

_____ Number of Formal Meetings each lasting for _____ Hours on Average
 _____ Number of Informal Meetings each lasting for _____ Hours on Average

2-9. Frequency of contact with Management/CEO of your portfolio company on telephone during the last one month?

_____ Times, each call lasting for approximately _____ minutes.

2-10. Number of reports required to be filed by the portfolio company

Frequency	Daily	Weekly	Fortnightly	Monthly	Bi-Monthly	Yearly
Numbers						

2-11. How useful do you believe has been the interaction with your Portfolio Company for you? (Please Tick ✓)

- ☐ Very Useful
- ☐ Useful
- ☐ Not sure/Can't say
- ☐ Not Much
- ☐ Not Useful at all

2-12. If you are facing any constraints preventing you from interaction with your portfolio companies please tick ✓ and/or list

- ☐ No Constraints
- ☐ Time
- ☐ Non-Co-operation of the Portfolio Company
- ☐ Any Other: _____

2-13. How would you rate the performance of this portfolio company so far? (Please Tick ✓)

- ☐ Outstanding
- ☐ Unsatisfactory
- ☐ Good
- ☐ Poor
- ☐ Satisfactory

2-14. Involvement Rating (Involvement in the affairs of portfolio company by the venture -capitalist) (Please Tick ✓)

Degree of Involvement	General trend in the venture capital industry of your country	Your Company Policy	Your Involvement in the referred portfolio company
Very close involvement			
Close involvement			
Involvement on case to case basis			
Very little involvement			
No involvement at all			

2-15. How would you rate the general reputation of the portfolio company /management team within its particular industry ? (Please Tick ✓)

☐ Well Above Average

☐ Above Average

☐ Average

☐ Below Average

☐ Much Below Average

2-16. How do you rate the competency of your portfolio company/management team regarding the optimal usage of resources available to it/them (Please Tick ✓)

☐ Well Above Average

☐ Above Average

☐ Average

☐ Below Average

☐ Much Below Average

2-17. State the level of your participation in the following activities in your portfolio company. (Please Tick ✓)

- 1 Never
- 2 Less Than Venture Management Team
- 3 As much as Venture Management Team
- 4 More than Venture Management Team
- 5 All participation by You

Kind of Activity	1	2	3	4	5
Personnel Search					
Interview and Selection					
Negotiation of Terms with Prospective Candidate					
Development of Professional Support Group					
Personnel Motivation					
Personnel Replacement					
Formulation of Initial Business Strategy					
Ongoing Strategy Development					
Management of Crises					
Development of Production Techniques					
Selection of Vendors and Equipment					
Interfacing with Investor Group					
Obtaining Alternative Resources of Debt Finance					
Obtaining Alternative Resources of Equity Finance					
Monitoring Performance					
Any Other Activity (Please Name)					

Section 3

Resource Assessment

3-1. How would you rate resource strengths of your fund management team and their ability to assist your portfolio company in the following areas:-

(Please Tick ✓)

1. Well Above Average 2. Above Average 3. Average
4. Below Average 5. Well below Average

Resource/Capability	1	2	3	4	5
Number of Contact-Financial Institution					
Number of Contacts-PC Industry					
Number of Contacts-Other Industries					
Industry Knowledge					
Personnel Management					
Strategic Planning					
Project/Idea Evaluation					
Financial Expertise					
Operational Planning					
Crises Management					
Monitoring Performance					

3-2. How would you rate the in-house resources of your Portfolio Company in terms of the following capabilities vis-à-vis companies in the same industry of your country:-

1. Well Above Average 2. Above Average 3. Average
4. Below Average 5. Well below Average

(Please Tick ✓)

Resource/Capability	1	2	3	4	5
Number of Contact-Financial Institution					
Number of Contacts-PC Industry					
Number of Contacts-Other Industries					
Industry Knowledge					
Personnel Management					
Strategic Planning					
Project/Idea Evaluation					
Financial Expertise					
Operational Planning					
Crises Management					
Monitoring Performance					

13 Appendix -IV Correspondence Record

Correspondence Record: Asian Venture Capital Journal

Identity: Tommy Yip, Editor, Asian Venture Capital Journal

Date: Wed, 26 May 1999

Country: Hong Kong

Dear Mr. Naqi,

I am replying your earlier email about some errors that you have found in the Guide to Venture Capital in Asia.

1. Page 28. There seems to be a discrepancy regarding reporting of total venture capital pool in China and Hong Kong. The venture capital pool reported separately in USD Million for China and Hong Kong for 1997 is USD 3,500 Million and USD 9,632 Million respectively. The total comes to USD 13,132 Million whereas it is reported as USD 10,670 Million on page 28. Similarly, new funds raised and annual investments in the separate country details when joined together do not produce the results indicated on page 25. Same is the case with number of venture capital firms.

This is NOT a discrepancy. Since 90% of the private equity firms treat Hong Kong and China as one pool, we have compiled one overall figure for Hong Kong & China. This overall figure is NOT the sum of the figures in Hong Kong and China section. Please read Pg. 15 for more detail.

2. Page 151 - According to the your directory the seed and Mezzanine investment in Singapore is 3.6% and 24% receptively whereas according to Singapore government survey available on the net it is 34% and 12% respectively. Why so large a difference.

When we are talking about Seed, we mean the stage where initial concept of the business is being formed. From my knowledge, there is no way that Singapore could have 34% invested in Seed stage since it is the most risky stage among all. If the info is from EDB they may have accounted Start-up and Early stage into that 34% figure. One reason why the EDB publishes the data so differently from ours is that they account only the funds that are raised in Singapore

and invested in Singapore. For your information, Singapore firms get only about 10-20% of all fund raised locally.

3. Page 28- As per page 28 the venture capital pool in Pakistan was USD 3 Million . The details provided in the Pakistan sections records Pak Rs. 250 Million and thus usage of an exchange rate of Pak Rs. 83/USD. Similarly Sri Lanka venture capital pool on page 28 has been recorded at USD 4 Million in 1991 and details in the Sri Lanka section exhibits SR 319 million indicating conversion rate of SR 80/USD. As far as I remember, exchange rates in these countries have never touched 80/USD.

As per page 28 the venture capital pool in Pakistan was USD 6 Million NOT USD 3 Million. If you use Rs. 250 million to be divided by 6, you get 41.6 NOT 83. Exchange rate for Sri Lanka in 1991 is provided by the Sri Lanka Government and I believe this rate is accurate.

Page- 126. The New Zealand -Sources of venture capital pie chart seems to be wrong since the total comes to 109 instead of 100.

This is an error. The percentage of Insurance Companies should be 8% instead of 17.4%. Thank you for your kind attention.

5. Page 105. Korean venture capital investment is more than total venture capital pool in 1997. Page 61. The total amount in USD for Hong Kong comes to USD 4687 Million and not to USD 4,691 Million.

Since most of the foreign private equity investments in Korea are denominated in US\$ and Won had fell more than 50% during 1997, the accumulative portfolio become somewhat huge after converted into Won. Please refer to Pg. 15. The total amount in USD for Hong Kong comes to USD 4,691 Million and not to USD 4,687 Million.

6. Page 25. There seems to be a currency conversion rate error in either the total venture capital pool in 1996 on page 28 for Philippines or the new funds raised.

This is NOT an conversion rate error. As you may be aware of, the Peso had devaluated so much during the second half of 1997 It was around P26/US\$ during 1996, and 'came down to around P40/US\$ in 1997.

7. Page 68- The graph relating to Indian venture capital investment portfolio is wrong as it depicts IR 16,528 in 1997 instead of 14,628 as on page 65.

This is an error. Please refer to 14,628 in Pg. 65 and ignore the 19,528. Thank you for your kind attention.

8. Page-92 The data depicted relating to investment portfolio in Japan 1991-1996 seems to be seriously flawed. I can pick up data 1995-1997 from page 91 but will appreciate if you can supply the correct data from 1991-1994.

Attached please find the excel file with the figures that you need.

If you have any further questions, please send me an email. Thank you.

Appendix IV- Correspondence Record: Venture Capital Professionals

IDENTITY: JUNG-KYOO YANG, CHIEF, INTERNATIONAL BUSINESS DEPARTMENT, KOREA TECHNOLOGY CORPORATION

DATE: MARCH 18, 1999

COUNTRY: SOUTH KOREA

Q. 1. Do you believe that there is a difference between the American and Asian style/definition of venture capital? if yes, please elaborate.

Ans: Asian venture capital is not a venture capital, but a private equity capital. I define this way as Asian VC does not take a risk of technology or commercial feasibility. They do not invest in start-up or young stage. We see some American style in Korea, Taiwan, and Singapore, but most cases are large sized private equity investments in stabilized and proven companies for their growth or expansion purpose.

Q.2. Please state your opinion about the hindrances to the development of venture capital in Asia?

Ans: Investment exit mechanism must be well developed for venture capital growth. Without this, how and why do they invest?

Q.3. What is your opinion about the effect of Asian crisis on venture capital market of Asia?

Ans: 3. In Korea, the crisis was the once in a life time opportunities for venture capital investments as it nosed down deal price and many good ventures were in need of working capital and growth capital which were financed in debt form. In addition, the crisis made them change their attitude on debt financing. They became to carefully listen to equity financing.

Q.4. What is your opinion about the involvement of venture capitalist in the affairs of the portfolio companies? Please elaborate.

Ans: As venture capitalists have observed various cases of business matters in other portfolio, they are in good position to give advises. In financial side, their contribution cannot be neglected and annoyed. Their role in bringing the portfolio to public stock market will be of critical significance.

Q.5. What kind of activities do you think are best suited for the venture capitalist to be involved in its portfolio companies?

Ans: Advising on financial matters. Helping establishing business alliance. Assisting in IPO

IDENTITY: CONFIDENTIAL (ON REQUEST)

DATE: MARCH 23, 1999

COUNTRY: SINGAPORE

Q.1. Do you believe that there is a difference between the American and Asian style/definition of venture capital? If yes please elaborate.

Ans; Cannot comment, we are not an American VC.

Q.2 Please state your opinion about the hindrances to the development of venture capital in Asia?

Ans: Hindrances include over-supply of cheap debt with risks mispriced. Also poor treatment of minority shareholders, poor transparency and lack of familiarity with dealing with external shareholders.

Q.3. What is your opinion about the effect of Asian crisis on venture capital market of Asia?

Ans: It has devastated portfolio returns, which were already poor. There is a short term need for capital, but whether the structural and altitudinal changes have taken place to make the market more attractive is unproven.

Q.4. What is your opinion about the involvement of venture capitalist in the >affairs of the portfolio companies? Please elaborate.

Ans: VCs can add-value in many ways depending on their team competencies. and on the contract between VC and investee. What matters is that VCs do not substitute for good full time executives.

Q.4. What kind of activities do you think are best suited for the venture capitalist to be involved in its portfolio companies?

Ans: Appropriate areas for VCs to contribute surround strategy, projects outside the usual business like acquisitions and IPOs.

IDENTITY: NOEL SANBORN, PRINCIPAL, A.T.KEARNY

DATE: APRIL 5, 1999

COUNTRY: SINGAPORE

Q.1. Please state your opinion about the hindrances to the development of venture capital in Asia?

Ans:

- There are very few experienced VC teams. Too many people in the industry are few driven rather than carry driven deals.
- There is too much money chasing to few good
- Company transparency
- Bank bankruptcy laws are in adequate corruption and criminal with in investee companies and sometimes in VC funds

Q.2. What is your opinion about the effect of Asian crisis on venture capital >market of Asia?

Ans: More opportunity to invest but must still be careful.

Q.3. What is your opinion about the involvement of venture capitalist in the affairs of the portfolio companies? Please elaborate.

Ans: A good VC person should be able to add a lot of value and should be sought after by investee companies. Instead, many firms just want cheap money with minimal strings attached.

Q.4. What kind of activities do you think are best suited for the venture capitalist to be involved in its portfolio companies?

Ans: Any thing in which they can add value.

IDENTITY: NICHOLAS ASHBY, MANAGING DIRECTOR, GLOBAL ALLIANCE CAPITAL (MALAYSIA)

DATE: APRIL 5, 1999

COUNTRY: MALAYSIA

Answers below, and brochure attached for your perusal. Good luck with your project - I look forward to seeing the results of your work when complete.

Q.1. Do you believe that there is a difference between the American and Asian style/definition of venture capital? if yes, please elaborate.

Ans: Yes - in US it means capital for start-ups or early-stage companies, whereas in Asia and particularly in Malaysia it refers to pre-IPO funding, across a broader range of sectors than would be the case in US. There is less of a pioneer spirit and more of a quick profit motive here

Q.2. Please state your opinion about the hindrances to the development of venture capital in Asia?

There are many:

- Unrealistic price expectation
- Opaque accounting e.g. profits depressed for tax reasons)
- Insufficient management depth / capability / experience to give investors confidence to invest
- Poorly prepared / ill thought-out business plans

Q.3. What is your opinion about the effect of Asian crisis on venture capital market of Asia?

- Reduced number of opportunities
- Many financial projections unattainable
- More difficult to exit by listing
- Therefore VC's need higher IRR hurdle to justify investment, so inevitably the volume/value of investments has declined and will continue to do so.

Q.4. What is your opinion about the involvement of venture capitalist in the affairs of the portfolio companies? Please elaborate.

Ans:

- Should restrict to board meeting attendance and inspection of monthly management accounts
- Not interfere in day-to-day business or management
- Should be ready to help when company in trouble or when asked
- Should not lose sight of partnership with owner

Q.5. What: kind of activities do you think are best suited for the venture capitalist to be involved in its portfolio companies?

Ans: See above. There is a trend towards greater management involvement and control, largely a symptom of the Asia crisis and need for VC's to maximise their returns. However this is very

time consuming, so they need to appoint outsiders to take on the key roles. In this way they become part of a management buy-in team.

IDENTITY: CONFIDENTIAL (ON REQUEST)

DATE: APRIL, 07, 1999

COUNTRY: HONG KONG

Dear Mr Naqi

Many thanks for your emails and I apologise for the delay in responding.

It is not apparent from your email whether you know that our firm is, in fact, a law firm rather than a venture capital firm. While we have experience in acting on both side of the venture capital industry (both for investees and targets), our involvement is on legal basis rather than from a strict commercial, venture capitalist approach.

Notwithstanding this, I attach below some responses to the questions which you raised.

It is not apparent

Q.1. Do you believe that there is a difference between the American and Asian style/definition of venture capital? If yes, please elaborate.

Ans: Our experience of venture capital in Europe suggest that there is a difference between the style/definition adopted in Europe and the approach in Asia. While there is generally a focus on seed capital and start up capital in Western economies (moving on to development capital and mezzanine financing), in Asia capitalists appear reluctant to encounter the greater risk associated with this approach. Accordingly, venture capital appears more directed towards development capital, backing expanding companies with a proven track record.

Q.2 Please state your opinion about the hindrances to the development of venture capital in Asia?

Ans: The biggest hindrance, in my view, is the difference in valuation placed on targets by the owners and the investors. owners are still valuing "pre-crash" while investors are taking a longer term view and valuing on post crash asset values. This is one of the biggest difficulties in progressing venture capital activities. Another is the reluctance of targets to appreciate the goals of the capitalists. Many exists for capitalists require the investees to relinquish control of what may be long standing family companies. Capitalists require a rate of return on their money that may not allow investees to continue to operate and develop the business in the way that, historically, they may have operated.

Q.2. What is your opinion about the effect of Asian crisis on venture capital market of Asia?

Ans: The crisis has thrown up opportunities for venture capitalists and focused targets minds on the different means of fund raising available to them. However, the differences in valuation prove a hindrance.

Q.3. What is your opinion about the involvement of venture capitalist in the affairs of the portfolio companies? Please elaborate.

Ans: It is surprising to us, with experience of the European market, that venture capitalists in Asia have, historically, been willing to take minority positions without management control. Even post crash, this seems to be the case. This appears to us to be an historic hold over, based on the culture of Asia owners unwilling to relinquish any form of control over their business. While capitalists work around this, it is likely, in our opinion, that greater emphasis is likely to be placed on obtaining management control in the future, primarily in order to protect investments made in these turbulent times.

Q.4. What kind of activities do you think are best suited for the venture capitalist to be involved in its portfolio companies?

Ans: Venture capitalists do not want day to day involvement in portfolio companies. What they seek is the ability to shape development in order to secure their return. Accordingly, strategic involvement in business development is, probably, the most important area in which venture Capitalists would seek to be involved.

I hope that the above comments are helpful. They are given to you only for collation with other comments you receive and to be used in your thesis without direct quotation or attribution. These are my views and not necessarily those of the Firm. Please keep this information strictly confidential and do not reveal the source in your thesis.

I shall be delighted for an opportunity to review the information you have obtained as a result of your research. I hope that my input is helpful.

IDENTITY: CONFIDENTIAL (ON REQUEST)

DATE: APRIL 19, 1999

COUNTRY: HONG KONG

Since I am responsible for the China business, my comments only pertain to my experience there:

Q.1. What are different sources of potential venture capital deals?

Ans: Sources - contacts of all sorts, lawyers, deal brokers, investment bankers, accountants, govt. etc. etc.

Q.2. What investment evaluation criteria do you use to select projects for financing?

2Ans: Evaluation criteria - business sector, internal discipline, deal structure, risk evaluation, references, etc.

Q.3. What is the normal IRR and the average holding period in venture capital financing?

Ans: IRR 25% or above

Q.4. What exit routes are normally employed by venture capitalists?

Ans: Exit. put option, sale to business partner, trade sale.

Hope the above is useful

IDENTITY: STANDARD CHARTERED ASIA DEVELOPMENT CAPITAL LTD.

DATE: APRIL 21, 1999

COUNTRY: HONG KONG

Sorry to tell you that I haven't checked my e-mail for sometime and you are not alone.

Anyway, here is a brief reply:

Q.1. What are different sources of potential venture capital deals?

Ans: Sources of VC deals are mainly three for me (1) investment banks, (2) fellow VC firms, and (3) personal connections.

Q.2. What investment evaluation criteria do you use to select projects for financing?

Ans: It varies but most would emphasize (1) track records, (2) management quality, (3) growth potential, and (4) exit mechanism.

Q.3. What is the normal IRR and the average holding period in venture capital financing?

Ans: IRR for my company is 30% and holding period 1 to 5 years.

Q.4. What exit routes are normally employed by venture capitalists?

Ans: Exits are mainly through IPO. However, 3rd party sales sometimes occur and the deal structure always include redemption by the issuer if IPO/exit does not take place within the holding period.

Q.5. What do you see are the hindrance to development of venture capital in Asia

Ans: Hindrance include the low market valuation for some sectors in certain markets e.g. industrial sector in Hong Kong. Another one is the mental resistance of giving up equity to outside parties.

Q.6. What do you believe will be the effect of Asian crises on venture capital?

Ans: Asian Crisis caused many investments to fold mainly due to FX losses and tightened credit. On the other hand, it also opened doors for VC in some of the more restricted countries such as Korea and Taiwan with bargain hunting opportunities.

Q.7. What do you believe is the future of venture capital Asia?

Ans: Finally, the VC industry in Asia will become more popular and sophisticated. However, it'll also drive up the pricing of deals as many more funds flow in.

IDENTITY: CONFIDENTIAL (ON REQUEST)

DATE: APRIL 2, 2000

COUNTRY :HONG KONG

Q. 1. Is Asian venture capital culture different from venture capital culture in the United States and Europe? In what respect?

Ans: 1: The main differences are:

1) In the US and Europe the Private equity investor normally has a clear control position in the company. In Asia it is normally a minority interest. It is much harder in Asia to enforce a positive agenda on a company.

2) Given that in US/Europe management is motivated by options and has no other significant interests, in Asia Management is often the dominant shareholder and often has other interests including. This makes it much harder to align economic incentives between Financial investors and management.

Q.2. Do you believe that venture capitalists in Asia are having an easier time as compared to their counterparts in Europe/United States?

Ans: No, I have done MBO's in the USA and Europe and the Private equity Business is harder in Asia. There is a much more substantial educational exercise to teach partners and managers what exits and shareholder value really mean.

Q.3. Do you believe that venture capitalists in Asia allocate more time and efforts toward involvement in portfolio companies than venture capitalists in the United States and Europe? Why/Why not?

Ans: In Asia there is too much emphasis on doing deals. Investors need to be more interventionary and add more value to portfolio companies. This is the main reason why the issues at Q1 are so vital

Q.4. What factors have hindered you in building up an ideal value-added relationship with your portfolio company?

Ans: Management obsession with an imperialistic sense of "control", lack of transparency about use of capital and business performance and problems in aligning interests.

Q.5. Do you agree that the value-added role of venture capitalist is more hype than reality? Why/Why not?

Ans: In the US and Europe there is no Hype about added value; it is being created and that is why high returns are made. In Asia it is the main weakness in the area where managers need to walk the walk rather than talk the talk!

IDENTITY : GODWIN PON, INVESTMENT MANAGER , AGRI-FOOD EQUITY FUND

DATE:APRIL 4, 2001

COUNTRY: CANADA

Hello. I'd appreciate it if I could get a complete copy of your report. I would be happy to participate in your survey. In your analysis of the venture capital market in Asia, did you break the funds down my sectors?? I'd be interested to know where some of the dollars are going into. Other factors such as size of investment, structure, and stage the company was at (start up/expanding/restructuring) would be useful as well. Here are my responses.

Q.1. How do you determine whether your portfolio company needs your assistance?

Ans: As one of our conditions with our investments we always request a seat on the company's board of directors. Sometimes depending on the company that seat/option we have will be just as an observer or it may be in an active capacity, ie as a full board director. Other value added services we provide are training sessions to our invested companies CEOs. Training sessions such as Corporate Governance, IPO, etc We consider this all as value added service. During these special outings where we get the CEOs together we encourage them to identify any synergies within one another and network opportunities.

Remember as a VC you are essentially like a partner to the company. So as a partner what else do you have to offer (clients, referrals, services to the company.

Q.2. What conditions are necessary for a venture capitalist to be able to add more value in his portfolio company?

Ans: I think it is extremely valuable and important. A venture capitalists must be able to provide more than just financing. We tell our clients and encourage them to see other vc...to see what they have to offer. all vcs offer \$...But what else sets them apart from one another.

Q.3. What conditions are necessary for a portfolio company to able to derive most benefits from the value-added efforts of venture capitalist?

Ans: To value the feedback vcs provide. Sometimes it takes a company in crisis before they will start to listen to outside advice.

Q.4. Do you believe that venture capitalists that are more involved in their portfolio companies perform any better? Why/Why not?

Ans: I think this depends on the relationship between the vc and company. There is no way that the vc can understand the business as good as the CEO. Otherwise if we have this situation the vc shouldn't have invested in the company anyways. Overall I think if the relationship between the two is good, yes...I think that the company performs better. We do not take an active interests to be involved in the day to day activities... I don't want to know what their hours of operations are. As an investor I trust my CEO to take care of the day to day stuff..

Q.5. Do you believe that the relation between you and the owner of your portfolio company is a principal/agent relation? Why/Why not?

Ans: Not sure I understand.

IDENTITY: CONFIDENTIAL (ON REQUEST)

DATE: APRIL 4, 2000

COUNTRY: TAIWAN

We are one of many VC firms in Taiwan. My comments only represent what we see in Taiwan. The above comment is just to let you know the reality in Taiwan. Please do not quote me.

Q. 1. Is Asian venture capital culture different form venture capital culture in the United States and Europe? In what respect?

Ans: VCs here are different among ourselves. Some of us follow the US VC practice,some others may choose to follow the traditional way

Q.2. Do you believe that venture capitalists in Asia are having an easier time as compared to their counterparts in Europe/United States?

Ans: I don't understand what do you mean by "easier time". It is not easier to make the right investment decision in Taiwan. The capital market is not as mature as we have in US. The valuation method in US is well developed while in Taiwan it is very different and is still developing.

Q.3. Do you believe that venture capitalists in Asia allocate more time and efforts toward involvement in portfolio companies than venture capitalists in the United States and Europe? Why/Why not?

Ans: Most of the startups in US are backed by VCs only. The lead investor is the only helping hand besides the management. In Taiwan, there is usually a "chairman" act as the lead investor. The VCs are helping only. In case that the VC is the lead investor, VC usually spend a lot of time on the company. In US, those co-invest "VCs" are not much involved neither.

Q.4. What factors have hindered you in building up an ideal value-added relationship with your portfolio company?

Ans: Most VCs do provide value-added service to our companies. We help in business connections, hiring, strategy consulting... very similar with our US counter parts. In some cases, VCs do spend not much time in their company. These are late stage investments. For late stage investors, they are different with startup investors. We may have more late stage investors in Taiwan claim to be VCs than in US.

Q.5. Do you agree that the value-added role of venture capitalist is more hype than reality? Why/Why not?

Ans: Value-added is the job of VCs. It is a general practice, not a hype. In Taiwan, some management do not have close relation with their VC investor. They sometime do not willing to disclose their problems with their VC investor. VC in this case are just mostly minor investors. There may be more co-invest VCs in Taiwan than in US. Those VCs that take lead in Taiwan, still very active in management involvement.

IDENTITY: CONFIDENTIAL (ON REQUEST)

DATE: APRIL 15, 2000

COUNTRY: HONG KONG

Q.1. How do you determine whether your portfolio company needs your assistance?

Ans: We always as a policy focus investments on few industries where we can help our companies. We strengthen our assistance when cash is finishing and new round of financing is

required, when there are organisational problems (vacant positions, not right people...), when budget is not respected.

Q.2. What conditions are necessary for a venture capitalist to be able to add more value in his portfolio company?

Ans: Have network of contacts, know the industry, have management experience, have gone 2-3 times through whole investment process

Q.3. What conditions are necessary for a portfolio company to be able to derive most benefits from the value-added efforts of venture capitalist?

Ans: Right equity ownership (not too much not too little), have VC representative sitting on board, try to understand VC fund portfolio and experience so that he can ask for help in relevant situations

Q.4. Do you believe that venture capitalists that are more involved in their portfolio companies perform any better? Why/Why not?

Ans: Yes if V.Capitalists have experience in the company industry

Q.5. Do you believe that the relation between you and the owner of your portfolio company is a principal/agent relation with you as principal and the owner as your agent? Why/Why not?

Ans: No, because if it is perceived like that, people cannot collaborate in the right way. Sometimes it is like that because management does not have right attitude.

IDENTITY: HARJEEV KANDHARI, NEW MEDIA SPARK

DATE: APRIL 18, 2000

COUNTRY: UNITED KINGDOM

In response to your request for some information from NewMedia SPARK, Harjeev has put forward some answers for you:

Q.1. How do you determine whether your portfolio company needs your assistance?

Ans: Companies can always use the assistance of their VC. Some need more help than others and we assess this through performance metrics and milestones met.

Q.2. What conditions are necessary for a venture capitalist to be able to add more value in his portfolio company?

Ans: VC needs expertise, contacts etc that are relevant to the company. VC needs to be on the Board and have regular contact with the company.

Q.3. What conditions are necessary for a portfolio company to be able to derive most benefits from the value-added efforts of venture capitalist?

Ans: The company needs to be open to their VC adding value. Some companies resent VCs meddling. Personality issues are very important here. They need to understand where the VC is coming from. Some companies feel that the VCs interest and their interest is not aligned. This sometimes may be true but VCs have only one objective and that is clear. We are after financial returns and will do what we have to maximise that. That usually dovetails with the interests of the entrepreneurs.

Q.4. Do you believe that venture capitalists that are more involved in their portfolio companies perform any better? Why/Why not?

Ans: Yes VCs that are more involved in their portfolio companies do perform better. This is because they can solve problems and fight fires before they become life threatening to a company. Also the more knowledge they have about a company the more they can help them re biz dev, re networking etc. Finally the better they know their companies the better they can champion them internally when it comes to subsequent rounds etc.

Q.5. Do you believe that the relation between you and the owner of your portfolio company is a principal/agent relation? Why/Why not?

Yes.

We look forward to receiving a copy of your finished project, please send it to the attention of Harjeev Kandhari.

IDENTITY: CONFIDENTIAL (ON REQUEST)

DATE: MAY, 7, 2000

COUNTRY: HONG KONG

Q. 1. Is Asian venture capital culture different from venture capital culture in the United States and Europe? In what respect?

Ans: Yes. VC culture is probably less developed in Asia than in the US, less history of VC in Asia, fewer players, more limited track record.

Q.2. Do you believe that venture capitalists in Asia are having an easier time as compared to their counterparts in Europe/United States?

Ans: No reason to believe that VCs in Asia are having an easier time than VCs in the US. In some respects, they are having a more difficult time than their counterparts in the US because

VCs in Asia did not make the kind of returns that their counterparts in the US did over the last few years.

Q.3. Do you believe that venture capitalists in Asia allocate more time and efforts toward involvement in portfolio companies than venture capitalists in the United States and Europe? Why/Why not?

Ans: No, I have no reason to believe that in general VCs in Asia allocate more time to portfolio companies than VCs in the US do nor any reason to believe that they allocate less. Something like this will vary greatly from VC firm to VC firm and from portfolio company to portfolio company.

Q.4. What factors have hindered you in building up an ideal value-added relationship with your portfolio company?

Ans: Lack of time is probably the primary reason.

Q.5. Do you agree that the value-added role of venture capitalist is more hype than reality? Why/Why not?

Ans: No, do not believe that. I do believe that VCs can and in many cases do add significant value to portfolio companies.

IDENTITY: CONFIDENTIAL (ON REQUEST)

DATE: AUGUST 15, 2000

COUNTRY: SINGAPORE

Q.1. How do you determine whether your portfolio company needs your assistance?

Ans: My own knowledge and experience.

Q.2. What conditions are necessary for a venture capitalist to be able to add more value in his portfolio company?

Ans: Skills.

Q.3. What conditions are necessary for a portfolio company to be able to derive most benefits from the value-added efforts of venture capitalist?

Ans: Company must work as a partner with VC and needs to communicate the company's need to the VC, and visa versa.

Q.4. Do you believe that venture capitalists that are more involved in their portfolio companies perform any better? Why/Why not?

Ans: Yes, because more talent and expertise in different areas that the VC brings to the table complement the company founders. VC also brings networks and the knowledge of growing multiple companies. VC's can share industry and economic information across the portfolio of companies avoiding some replication of efforts. Etc.

Q.5. Do you believe that the relation between you and the owner of your portfolio company is a principal/agent relation? Why/Why not?

Ans: No. It is a partnership to achieve a common goal of growing a business in order to achieve high shareholder value.

IDENTITY: SIMON HO, CROSBY ASSET MANAGEMENT

DATE: AUGUST 17, 2000

COUNTRY: SINGAPORE

Here is our response to your questions:

Q.1. How do you determine whether your portfolio company needs your assistance?

Ans: Our assistance is part of a long-term relation, starting with the investment and shareholders agreement, milestones and warrants, development of final business plan, participation in board meetings, regular business reviews and reporting. In addition, we arrange meetings and seminars for our portfolio companies on various topics, networking meetings, arrange contacts, discussion partner in licensing negotiations, providing scientific and industry business intelligence, exit planning, trade sell, IPO, etc

Q.2. What conditions are necessary for a venture capitalist to be able to add more value in his portfolio company?

Ans: In-depth and breadth industry know-how covering many aspects; scientific, medical, business management, pharmaceutical operations, financial, patents, licensing negotiations, etc and lots of contacts.

Q.3. What conditions are necessary for a portfolio company to able to derive most benefits from the value-added efforts of venture capitalist?

Ans: Strong operation management team with in-depth and breadth pharmaceutical industry know-how, covering many aspects; scientific, medical, business management, pharmaceutical operations, financial, patents, licensing negotiations, etc. Focused efforts on agreed business strategy, business plan, milestones, open and flexible mindset. And contacts.

Q.4. Do you believe that venture capitalists that are more involved in their portfolio companies perform any better? Why/Why not?

Ans: Both pro's and con's to have a tight involvement. Regular contact is important, not necessarily tight control if everything is on track. Our philosophy is not to take a board member seat ourselves, we often assign an external person who have the right expertise. Agreed business plan and milestone and good working climate is key for success.

Q.5. Do you believe that the relation between you and the owner of your portfolio company is a principal/agent relation? Why/Why not?

Ans: Neither, parties should share same objectives but have different roles. Investors and Founders/Management must share the same agenda, both short-term and long-term, i.e. exit strategy must be clear from the beginning.

IDENTITY: CONFIDENTIAL (ON REQUEST)

DATE: AUGUST 19, 2000

COUNTRY: SINGAPORE

Pls. find below some brief comments/answers.

Q.1. How do you determine whether your portfolio company needs your assistance?

They always do.

Q.2. What conditions are necessary for a venture capitalist to be able to add more value in his portfolio company?

Ans:

- Understand what competencies we have as VC's. Ensure that the VC is organised in a way that these competencies are transferred to the portfolio company (thus avoiding the partner promising all the things we can do and then, post-investment, send in a junior person to monitor the portfolio company....
- Thorough discussions with entrepreneur and other shareholders on what the ambition is for the company, our value added, how we work with a portfolio company
- Trust

Q.3. What conditions are necessary for a portfolio company to be able to derive most benefits from the value-added efforts of venture capitalist?

Ans:

- Openness

- Trust

Q.4. Do you believe that venture capitalists that are more involved in their portfolio companies perform any better? Why/Why not?

Ans:

- Depends very much whether it is a start-up/early stage VC (yes, certainly) or a leverage buy-out (hands-on involvement less important).
- For the former: It should be the case as the company needs strong support to realise the opportunities. In my experience, the key elements (of value-added) are: Strategic sparring partner, recruitment (senior management), funding and speed.

Q.5. Do you believe that the relation between you and the owner of your portfolio company is a principal/agent relation with you as principal and the owner as your agent? Why/Why not?

Ans: Not sure that I follow you on this one as I am part owner of the portfolio company. Maybe I should read it as me vs. the CEO/entrepreneur (often significant shareholder, but far from always).

IDENTITY: CONFIDENTIAL (ON REQUEST)

DATE: AUGUST 23, 2000

COUNTRY: SINGAPORE

Q.1. How do you determine whether your portfolio company needs your assistance?

Ans: By getting and staying close to the company. we take a board seat on every company we invest in and speak several times a week with the chairman or ceo. We also have an analyst pool who assist in business planning. We undertake regular performance reviews and attend every board meeting

Q.2. What conditions are necessary for a venture capitalist to be able to add more value in his portfolio company?

Ans: Management team open to investor input. Expertise on the part of the venture capitalist - we are sector specialists and the typical profile of our executives is MBA, accounting background.

Q.3. What conditions are necessary for a portfolio company to able to derive most benefits from the value-added efforts of venture capitalist?

Ans: A vc who has a true value added philosophy to investment. Sector specialism. good relationships between company and investor

Q.4. Do you believe that venture capitalists that are more involved in their portfolio companies perform any better? Why/Why not?

Ans: No evidence to support, but emphatically yes, depending on the competence of the VC. In our case, we have built an investment team with this in mind. In many cases, our input is about adding value, in others it is about avoiding the destruction of value. It is all about staying close to the company.

Q.5. Do you believe that the relation between you and the owner of your portfolio company is a principal/agent relation with you as principal and the owner as your agent? Why/Why not?

Ans: No idea

IDENTITY: CONFIDENTIAL (ON REQUEST)

DATE: AUGUST 23, 2000

COUNTRY: INDIA

Q. 1. Is Asian venture capital culture different from venture capital culture in the United States and Europe? In what respect?

Ans: Yes -the US is a very mature market. Entrepreneurs and vcs have far more experience and do not make as many mistakes.

Q.2. Do you believe that venture capitalists in Asia are having an easier time as compared to their counterparts in Europe/United States?

Ans: No.

Q.3. Do you believe that venture capitalists in Asia allocate more time and efforts toward involvement in portfolio companies than venture capitalists in the United States and Europe? Why/Why not?

Ans: Depends from vc to vc and what stage they are investing at. early stage investments typically require the vc to spend more time. In India, the vc may need to spend more time regardless as entrepreneurs often have less experience than their counterparts in the US.

Q.4. What factors have hindered you in building up an ideal value-added relationship with your portfolio company?

Ans: Our fund is not yet up, so we cannot comment.

Q.5. Do you agree that the value-added role of venture capitalist is more hype than reality? Why/Why not?

Ans: Depends from vc to vc and their network and relationships.

IDENTITY: CONFIDENTIAL (ON REQUEST)

DATE: AUGUST 23, 2000

COUNTRY: HONG KONG

Q. 1. Is Asian venture capital culture different from venture capital culture in the United States and Europe? In what respect?

Ans: Could be different, but it depends on the cultures of different firms. Some Asian shops invest global pool of money and they value global team work and need NY/London approval. Some are Asia dedicated funds and they have total autonomy but can also share ideas with the counterparties in Europe or US.

Q.2. Do you believe that venture capitalists in Asia are having an easier time as compared to their counterparts in Europe/United States?

Ans: No. Actually more difficult due to lack of very capable management in Asia and also the disclosure for Asian companies is not as good as in the US or Europe.

Q.3. Do you believe that venture capitalists in Asia allocate more time and efforts toward involvement in portfolio companies than venture capitalists in the United States and Europe? Why/Why not?

Ans: Not sure. Different firms do differently.

Q.4. What factors have hindered you in building up an ideal value-added relationship with your portfolio company?

Ans: Time priority.

Q.5. Do you agree that the value-added role of venture capitalist is more hype than reality? Why/Why not?

Ans: Depends. Most of the VCs really add value, a mutually beneficial situation. If the VC does not add value, why does it expect itself to make money?

IDENTITY: CONFIDENTIAL (ON REQUEST)

DATE: AUGUST 29, 2000

COUNTRY: SINGAPORE

Q. 1. Is Asian venture capital culture different from venture capital culture in the United States and Europe? In what respect?

Ans: Smaller community (ie players) to date though changing fast. The smallness has allowed potential investees to do more due diligence on the VC and to hold them to their word slightly longer.

Q.2. Do you believe that venture capitalists in Asia are having an easier time as compared to their counterparts in Europe/United States?

Ans: No. Fewer exists, thought that is changing, and def. fewer good AND available investee choices.

Q.3. Do you believe that venture capitalists in Asia allocate more time and efforts toward involvement in portfolio companies than venture capitalists in the United States and Europe? Why/Why not?

Ans: They devote more time but I believe less time adding "tough love" to getting the right decisions implemented.

Q.4. What factors have hindered you in building up an ideal value-added relationship with your portfolio company?

Ans: Difficulty in recruiting / adding senior staff assuming needed along the life cycle or from the beginning.

Q.5. Do you agree that the value-added role of venture capitalist is more hype than reality? Why/Why not?

Ans: More mismatched than hype. VC needs a return on investment in a short period of time. Anything else is hype. All other stakeholders with the same goal are lucky. Any others, walk a tight rope. As returns plunge and more money is thrown to the region by the largest players, the competition will make for even more bad deals. This creates a cycle to push VC to demand even more returns and allow for fewer chances in management led decision making.

IDENTITY: ELDERD LAND, GIMV N.V.

DATE: APRIL 4, 2001

COUNTRY: BELGIUM

Q.1. How do you determine whether your portfolio company needs your assistance?

Ans: Board meetings (12+ per year), regular contact with mgt (e-mail, phone, diner)

Q.2. What conditions are necessary for a venture capitalist to be able to add more value in his portfolio company?

Ans: Market knowledge, understanding of company/organisation, hands with approach (close contact with mgt and other key staff), corporate network, financial structure, costs

Q.3. What conditions are necessary for a portfolio company to able to derive most benefits from the value-added efforts of venture capitalist?

Ans: Structuring its own demand without becoming too formal, open communication, follow-up on contacts provided by VC, becoming part of VC's network.

Q.4. Do you believe that venture capitalists that are more involved in their portfolio companies perform any better? Why/Why not?

Ans: Yes, especially in the current bear market, a hands with and involved VC (value adding) can reduce the number of failures and build survivors. More positive, I even believe that such a value adding VC can accelerate the growth of the venture.

Q.5. Do you believe that the relation between you and the owner of your portfolio company is a principal/agent relation with you as principal and the owner as your agent? Why/Why not?

Ans: No as the company has to execute it does not mean that it can not require something from the VC: support, network etc.

IDENTITY: JOHN T. HOGAN, PH.D. PRINCIPAL, BCVC ASSOCIATES; BCVC PARTNERS

SENT: APRIL 06, 2001

COUNTRY: UNITED STATES

Naqi: I am pleased to be able to assist you in your doctoral research. I have worked with over 350 masters and doctoral students in the United States at Antioch University and The Union Institute for the past nine years as an Adjunct Professor. I have a Ph.D. in Business Administration with concentrations in Venture Capital Management, Entrepreneurship, and Strategic Management. I am also a practicing Venture Capitalist for five years in one of the leading mid-west Venture Capital firms.

In addition to the Executive Summary of the findings of your research and the chapter you offered to mail within two months, please mail me a completed copy of your thesis/dissertation. You may share my responses with anyone and everyone.

My responds to your research questions:

Q.1. How do you determine whether your portfolio company needs your assistance?

Ans: I decide by assessing the salient issues the Company needs to address in order to experience success. I coach the management team, and sometimes other Board members, on the strategic and tactical approaches to address those salient issues. If I am uncomfortable with the Company's performance, I tell the management team and the Board that I am uncomfortable and request both the management team's and the other Board member's assistance in gaining comfort. If I continue to experience dissonance, I either learn to live with it or build consensus with other Board members and/or investors, who are also uncomfortable, to change things, whatever those things are that need to be changed. I attempt to make this work to everyone's benefit. If I can not do this to everyone's benefit, and if the change still needs to be made for the benefit of the shareholders, I will force the issue, through power, either legitimate or perceived power, and will either win or lose on my change initiative. In all cases I must exert leadership as a Board member and investor.

Q.2. What conditions are necessary for a venture capitalist to be able to add more value in his portfolio company?

Ans: Conditions necessary to add more value...be in a position of power to affect change in the Company; have a deep understanding of the tools of general management, know how to use these tools, when to use these tools, and the fortitude to use them when required.

Q.3. What conditions are necessary for a portfolio company to able to derive most benefits from the value-added efforts of venture capitalist?

Ans: Conditions...that the management listen, evaluate, and implement the coaching given, of course only if the coaching will lead to the success of the company; that I can bring value to the Company that the Company is unable to access from other sources at a lesser cost to the Company than what my involvement costs the Company; that our relationship, (among the management, investors, and Board) is truly built upon shared goals and shared gains.

Q.4. Do you believe that venture capitalists that are more involved in their portfolio companies perform any better? Why/Why not?

Ans: The studies I have been able to find lead me to the conclusion that the level of involvement of the Venture Capitalist makes no difference in the final outcome of the success or lack of success of the Company. My experience, however, leads me to the conclusion that it depends on the quality level of performance that the VC and the Board delivers to the Company and that high quality performance by the VC and the Board makes a very large difference in the success of the Company. This, from my experience, is due primarily from the

experiential base the VCs and Board contribute to the leadership of the Company and the value that is added to the management team, by the VC and Board.

Q.5. Do you believe that the relation between you and the owner of your portfolio company is a principal/agent relation? Why/Why not?

Ans: I do not understand the question in relation to principal/agent relationship; consequently, I will not respond past the following thought. As a Board member I am responsible to all owners (shareholders), not just one, not just the majority owner, and not just my ownership position. If I am not a Board member and just an investor, which I try never to be in this position because it lacks in power, then I am much more passive and I represent only my ownership position.

Wishing you the best of luck in your research and completion of your doctoral program.

IDENTITY: MICHEL RÉ, EXECUTIVE VICE-PRESIDENT, INVESTMENTS,
BUSINESS DEVELOPMENT BANK OF CANADA

DATE: APRIL 20 , 2001

COUNTRY: CANADA

Dear Sir:

With reference to your request please find listed below my answers to your questions:

Q.1. How do you determine whether your portfolio company needs your assistance?

Ans: Skills of management, strength of the Board, Monitoring Issues identified at investment authorization.

Q.2. What conditions are necessary for a venture capitalist to be able to add more value in his portfolio company?

Ans: Skilled people. Workload of the individual taking into consideration the monitoring to be done.

Q.3. What conditions are necessary for a portfolio company to be able to derive most benefits from the value-added efforts of venture capitalist?

Ans: Having a Board that is well managed. Let VC work with management in various strategic committees

Q.4. Do you believe that venture capitalists that are more involved in their portfolio companies perform any better? Why/Why not?

Ans: Yes, Experience in growing companies. Quality of the network

Q.5. Do you believe that the relation between you and the owner of your portfolio company is a principal/agent relation? Why/Why not?

Ans: Clear communication is a must. Common objectives are important.

IDENTITY: TOM LAMBS, BARCLAYS CAPITAL

DATE: APRIL 20,2001

COUNTRY: UNITED KINGDOM

Q1. How do you determine whether your portfolio company needs your assistance?

Ans: One of our own executives will usually be a non executive director on the board of the investee company - we are already therefore actively involved each of our investee companies.

Q.2. What conditions are necessary for a venture capitalist to be able to add more value in his portfolio company?

Q.3. What conditions are necessary for a portfolio company to able to derive most benefits from the value-added efforts of venture capitalist?

Ans 2 &3 : Our input is usually as a sounding board as an NED mainly on strategic matters - the exec management always run the business day-to-day. Obviously the executive management of the business need to be receptive to input from the NED VC - usually they recognise that the VC representative and the VC house is experienced at dealing with issues of growing companies. Where the investee company is making an acquisition or exiting then the VC may be more actively involved in appraising/negotiating/dd/legals as these are core VC skills. The VC can also influence/ input by helping to select an appropriate independent chairman , particularly where there is a change in culture/style/ restructuring required. The VC may also need to become more actively involved when a change of executive management is needed.

Q.4. Do you believe that venture capitalists that are more involved in their portfolio companies perform any better? Why/Why not?

Ans: A hands on style is more likely to produce a more successful investment. Firstly any problems are identified and dealt with more quickly - this is key to not losing investment value. Secondly a close relationship with management is more likely to allow the VC to influence the exit timing - again this is important in realising returns.

Q.5. Do you believe that the relation between you and the owner of your portfolio company is a principal/agent relation? Why/Why not?

Ans: No. Both parties have are effectively part owners of the business and have an economic interest in building and realising shareholder value - they are both principals. However the VC is purely a financial investor whilst the managers are also employees/directors and may have motivations other than shareholder value (eg career aspirations, emotional attachment to the business, job security, ego , family succession etc) These can sometimes eventually put the VC and owner/driver at odds with each other - eg over the exit or strategy.

IDENTITY: CONFIDENTIAL (ON REQUEST)

DATE: APRIL 24,2001

COUNTRY: UNITED KINGDOM

Q1. How do you determine whether your portfolio company needs your assistance?

Ans: Review of performance: is it performing to its potential, is there a clear strategy

Q2. What conditions are necessary for a venture capitalist to be able to add more value in his portfolio company?

Ans: A strong working relationship with management but if management are the obstacle the ability to change management

Q3. What conditions are necessary for a portfolio company to able to derive most benefits from the value-added efforts of venture capitalist?

Ans: Ditto, they must feel that the VC is contributing and see it as a partnership.

Q4. Do you believe that venture capitalists that are more involved in their portfolio companies perform any better? Why/Why not?

Ans: Depends, we back management to run companies and the level of VC input depends on the depth and strength of the team. VC input may just be making sure team is right and then letting them get on with it. More VC involvement is not necessarily constructive.

Q5. Do you believe that the relation between you and the owner of your portfolio company is a principal/agent relation? Why/Why not?

Ans: It is more like a partnership.

IDENTITY: KURT KARLSSON, DIRECTOR, INVESTMENT OPERATIONS,
SWEDFUND INTERNATIONAL AB

DATE: APRIL 24, 2001

COUNTRY: SWEDEN

Q1. How do you determine whether your portfolio company needs your assistance?

Ans: If the management of a portfolio company does not meet the agreed goals in the business plan and this happens more than once, the venture capital company should act and either reformulate the business idea or replace the managers who underperform.

Q2. What conditions are necessary for a venture capitalist to be able to add more value to in his portfolio company?

Ans: I do not fully understand what you mean with "conditions". Generally speaking the venture capitalist should be located close to the portfolio company (<1 hour drive by car) in order to be able to have a close and frequent contact with the management. Ideally, the venture capitalist has an extensive network within the industrial sector and personal contacts with banks as well as with potential suppliers and customers to the portfolio company.

Q3. What conditions are necessary for a portfolio company to be able to derive most benefits from the value-added efforts of the venture capitalist?

Ans: The management of the portfolio company should have open minds and be responsive to suggestions from the venture capitalist. The management should not hesitate to ask the venture capitalist for help. The shareholders of the portfolio company should try to find one or two external Board Directors to get unbiased opinions about the development potential of the company and to get feedback from the market.

Q4. Do you believe that venture capitalists that are more involved in their portfolio companies perform any better? Why? Why not?

Ans: In general I believe that involvement of the venture capitalist up to a certain limit improves the performance of the portfolio company. However, the venture capitalist must restrict itself to act only within its role and not try to take over the responsibilities and duties of the Managing Director.

Q5. Do you believe that the relation between you and the owner of the portfolio company is a principal/agent relation with you as the principal and the owner as your agent? Why? Why not?

Ans: No, the relation should be on a more equal level. I see the owner and the venture capitalist as two business partners working together towards a common goal, the development of a profitable and competitive company.

IDENTITY: TIM HAZELL, INVESTMENT EXECUTIVE, BARING ENGLISH GROWTH FUND

DATE: APRIL 24, 2001

COUNTRY: UNITED KINGDOM

Dear Sayed

Thank you for your enquiry regarding your research on venture capital which Geoff Edge has passed to me for comment. We have no current interest in the Asian venture capital market, all our funds under management are targeted at the UK market alone. We have no problem regarding confidentiality.

Q.1. How do you determine whether your portfolio company needs your assistance?

Ans: We maintain a close relationship with all portfolio companies through monthly meetings, the regular receipt of management accounts and various ad hoc discussions. For most of the time, we add value through playing the role of a professional non-executive, calling the executives to account for their actions and using our experience to suggest alternative approaches. All portfolio companies receive such assistance so no decision is required. Occasionally, we are required to be more active, normally when there is a significant problem or opportunity. Such issues tend to be obvious and take priority over other work. Again, there is no real decision required. There are a few specialist areas where we can add further value. These tend to be in the fields of long term strategy, corporate finance and mergers and acquisitions. The decision as to which portfolio company might benefit from such assistance is a combination of the executives judgement as to whether he can add value and the performance of the company to date against plan (under performance tends to provoke greater assistance).

Q.2. What conditions are necessary for a venture capitalist to be able to add more value in his portfolio company?

Ans: Significant value is added when management recognise their own shortcomings and are receptive to external advice or where the venture capitalist has the means to force the issues.

Our cynical view is that, venture capitalists can only add significant value to weak management teams.

Q3. What conditions are necessary for a portfolio company to be able to derive most benefits from the value-added efforts of a venture capitalist?

Ans: See answer to Q2

Q4. Do you believe that venture capitalists that are more involved in their portfolio companies perform any better? Why/Why not?

Ans: Involvement in the portfolio gives early sight of potential problems and opportunities, there should be fewer surprises, which has to be positive. In addition, involvement with the portfolio helps build the goodwill between portfolio management and VC which can be very important when further negotiations are required (i.e. on exit). Some VCs have a specialist insight into certain sectors (i.e. technology) and may add additional value, we are more generalist and would not pretend to have such insights.

Q5. Do you believe that the relation between you and the owner of your portfolio company is a principal/agent relation with you as principal and the owner as your agent? Why/Why not?

Ans: No, the owner or owners, who are likely to be the executive management team, have more power than is implied by the classic principal/agent relationship. They tend to see themselves as the dominant stakeholder with the VC as a valued supplier of capital rather than the principal for whom they act. Obviously, it depends on the relative equity shareholdings and the other elements of control possessed by the VC.

IDENTITY: PANOS LIOULIAS, PARTNER, AVC VENTURE CAPITAL.

DATE: APRIL 25, 2001

COUNTRY: SWITZERLAND

Q. 1. Is Asian venture capital culture different from venture capital culture in the United States and Europe? In what respect?

Ans: Do not know the difference

Q2. Do you believe that venture capitalists in Asia are having an easier time as compared to their counterparts in Europe/United States?

Ans: No. Less competition but more hurdles and less exits.

Q3. What is your opinion about the hindrances to the development of venture capital in the Asian region?

Ans: I would guess a critical mass of experienced and credible Venture Capitalists.

Q.4. What factors are necessary for both parties. i.e. venture capitalist and portfolio company to build up an ideal value-added relationship?

Ans: Venture Capitalists must have the credibility that they can add values, to have operational experience and must be willing to do the real building work.

Q.5. Do you agree that the value-added role of venture capitalist is more hype than reality? Why/Why not?

Ans: Everybody says they are the ones that are very valuable to the company success. The value that is brought to the table is real not only money.

IDENTITY: DAVID W QUYSNER, MANAGING DIRECTOR, ABINGWORTH MANAGEMENT LIMITED

DATE: APRIL 27,2001

COUNTRY: UNITED KINGDOM

Q.1. What factors are necessary for both parties. i.e. venture capitalist and portfolio company to build up an ideal value-added relationship?

Ans: As with most relationships, mutual respect, a congruence of goals and the ability of each to satisfy a need of the other. Value added requires real and relevant skills which, because there is mutual confidence and trust can be effectively applied.

Q.5. Do you agree that the value-added role of venture capitalist is more hype than reality? Why/Why not?

Ans: Define your terms. Venture capital under the UK definition is a very broad church ranging from early stage technology investment through to large buy-outs that are indistinguishable from investment banking. In many of these areas the skill sets of the "venture capitalists" are predominantly financial and their own organisational structures and objectives are such that there is little scope to add value in any other area My own company is one of several in the UK and many in the USA which focus on a narrow range of activity (in our case biotechnology). We employ scientists with business skills rather than accountants or bankers and our USP is that we can bring skills and experience which will be needed to convert intellectual property into commercial reality. For instance, in addition to general financial assistance (including the provision of locum financial management) we will commonly assist in patent searches; IPR protection; inward and outward licensing; recruitment of key hires;

provide interim management of R&D; make available our network of high-level contacts in academia, the pharmaceuticals industry and elsewhere; and generally provide the experience of someone (through Board representation and otherwise) who has been through large parts of the movie before. Hope this helps. I regret that I can not extend my comments further.

IDENTITY: BILL FREZZA, GENERAL PARTNER, ADAMS CAPITAL MANAGEMENT

DATE: APRIL 27, 2001

COUNTRY: UNITED STATES

Q.1. How do you determine whether your portfolio company needs your assistance?

Ans: We are early-stage investors, so they always need our assistance. We do not make late-stage or passive investments. If entrepreneurs did not need our assistance and all they truly needed was cash, the valuation of the company would likely exceed our investment threshold. Our investment strategy, and means of earning above-market returns, is to invest both our money and our time. Our time is usually what is in shortest supply as we have plenty of money.

Q.2. What conditions are necessary for a venture capitalist to be able to add more value in his portfolio company?

Ans: Many years of actual operating experience and domain knowledge. In addition, a limit on the number of boards the VC sits on. (We limit our partners to 6 boards maximum.) A director who sits on 12 boards can only add marginal value. A 28 year old associate who has never had a real job outside of the venture capital industry acting as a director can only add marginal value.

Q.3. What conditions are necessary for a portfolio company to able to derive most benefits from the value-added efforts of venture capitalist?

Ans: Senior management must be coachable and primarily interested in creating capital gains rather than building empires, proving they are right, or servicing their own egos.

Q.4. Do you believe that venture capitalists that are more involved in their portfolio companies perform any better? Why/Why not?

Ans: Yes, provided they have solid domain experience.

Q.5. Do you believe that the relation between you and the owner of your portfolio company is a principal/agent relation? Why/Why not?

Ans: I'm not sure I understand the question. The shareholders own the portfolio company. Management works for the shareholders, whose interests are represented by the board. The board is responsible for hiring and firing senior management, including the founders who were "owners" only up until the day they sold preferred stock to a third party. The percentage of the company owned by the founders is irrelevant as the concept remains the same.

Most of our boards contain two VCs, two representatives from management, and one independent director (an outside industry expert) nominated by management and approved by the VCs. This group is responsible for maximizing shareholder value.

IDENTITY: VIJAY ANGADI, MANAGING DIRECTOR ICF AND TREASURER OF THE INDIAN VENTURE CAPITAL ASSN.

DATE: MAY 2, 2001

COUNTRY: INDIA

Q.1. Is Asian venture capital culture different from venture capital culture in the United States and Europe? In what respect?

Ans: quite different from US..could be similar to europe or to late stage funds in the US...

-lack of tech talent pool in r&d/academia to cross-pollinate ideas, check tech, help develop tech... vc's do not work together as in the us.. keep deals to themselves..

Q.2. Do you believe that venture capitalists in Asia are having an easier time as compared to their counterparts in Europe/United States?

Ans: difficult to say. there aren't a lot of high quality opportunities in India... lots of companies but of low quality so inexperienced VC's can lose money easily... ..lots of problems in investing in companies in Asia that are not typically found in US/Europe: ethics (have to be extremely careful about doing business in Asia), intentions are not always aligned with VC..it is not uncommon to have companies that want to spinoff divisions into separate companies etc.

Q.3. Do you believe that venture capitalists in Asia allocate more time and efforts toward involvement in portfolio companies than venture capitalists in the United States and Europe? Why/Why not?

Ans: No.. most have financial/investment banking backgrounds and neither have the contacts nor the skills to help a company...

Q.4. What factors have hindered you in building up an ideal value-added relationship with your portfolio company?

Ans: depth of team.. can often be lacking so time is spend is doing too many mundane/low end work rather than use contacts to do alliances etc.

Q.5. Do you agree that the value-added role of venture capitalist is more hype than reality? Why/Why not?

Ans: no.. absolutely necessary if one is investing at early stage.....becomes less important in later stages.

IDENTITY: FRÉDÉRIC DE LAMINNE, GENERAL MANAGER, E-CAPITAL

DATE: MAY, 2, 2001

COUNTRY: BELGIUM

Being a fairly recent fund (launched in late 1999), we have only limited experience.

Q.1. How do you determine whether your portfolio company needs your assistance?

Ans: Sometimes, we react to a demand coming from the company (additional funding needed,..) but we try to be pro-active and to raise issues

Q.2. What conditions are necessary for a venture capitalist to be able to add more value in his portfolio company?

Ans: It depends on (a) the maturity of the portfolio company: if it is young and is understaffed, it is easier for the VC to add value by bringing additional knowledge and (b) the abilities of the VC: if it is specialized in a sector and/or has a good network of interesting people, it can add value by bringing together the portfolio company and other companies

Q.3. What conditions are necessary for a portfolio company to be able to derive most benefits from the value-added efforts of venture capitalist?

Ans: The management of the portfolio company must be open to discussion and it should not believe that it knows better its own business. both the management and the VC must be convinced that they share the same interest

Q.4. Do you believe that venture capitalists that are more involved in their portfolio companies perform any better? Why/Why not?

Ans: Yes: that is why we try to be more and more "hands-on"

Q.5. Do you believe that the relation between you and the owner of your portfolio company is a principal/agent relation with you as principal and the owner as your agent? Why/Why not?

Ans: It is important that both parties share the same interest and act in the same direction to avoid the principal/agent relationship.

IDENTITY: NIKLAS HEDBORG, VENTSHARE MANAGEMENT AB

DATE: MAY 2, 2001

COUNTRY: SWEDEN

Q.1. How do you determine whether your portfolio company needs your assistance?

Ans: We always work closely with our portfolio company.

Q.2. What conditions are necessary for a venture capitalist to be able to add more value in his portfolio company?

Ans: Network, financial knowledge, strategic advice, restructuring possibilities.

Q.3. What conditions are necessary for a portfolio company to be able to derive most benefits from the value-added efforts of venture capitalist?

Ans: Open-minded management, sharing the same shareholder's agenda.

Q.4. Do you believe that venture capitalists that are more involved in their portfolio companies perform any better? Why/Why not?

Ans: Yes, as long as they are able to divide the operations performed by the management from the strategic work made by the board/owners.

Q.5. Do you believe that the relation between you and the owner of your portfolio company is a principal/agent relation with you as principal and the owner as your agent? Why/Why not?

Ans: Of course this relation is in some ways a principal/agent relation, but which relation is not today?

IDENTITY: HARALD LINDLAR, COMMUNICATIONS MANAGER, B-BUSINESS PARTNERS

DATE: MAY 4, 2001

COUNTRY: BELGIUM

Q.1. How do you determine whether your portfolio company needs your assistance?

Ans: We never determine this. One of our USPs is, that portfolio companies can benefit from our hardwired network of investors like ABB, SEB, Hewlett-Packard, Investor etc.... They have joined forces to provide capital and know-how. Thus, if a portfolio company needs help, they would ask ... Companies we invest in always remain independent ... that's our philosophy

Q.2. What conditions are necessary for a venture capitalist to be able to add more value in his portfolio company?

Ans: Adding value in our industry means to build companies. As mentioned before, we provide capital and knowlege, using a hardwired network of investors. We have a committment to built - we are not a pure finance company. This is, what makes us different.

Q.3. What conditions are necessary for a portfolio company to able to derive most benefits from the value-added efforts of venture capitalist?

Ans: They simply have to be open. A company we invest in does have all necessary pre-conditions for building a company. First of all they have to fit our business model. If they are working in an area, where one of our partners works also, we could create synergies, that others can only dream of.

Q.4. Do you believe that venture capitalists that are more involved in their portfolio companies perform any better? Why/Why not?

Ans: Yes, but its not a one-way-street. If VCs and portfolios regard business as partnership, they can benefit from all advantages they combine.

Q.5. Do you believe that the relation between you and the owner of your portfolio company is a principal/agent relation? Why/Why not?

Ans: No - independence is vital for building a business.

IDENTITY: CONFIDENTIAL ON REQUEST

DATE: MAY 5, 2001

COUNTRY: FRANCE

Q.1. How do you decide whether your portfolio company needs your assistance?

Ans: Though we do not manage the companies we have in portfolio, we have extremely close relationships with their management. Therefore we know pretty well what are the needs of the company and will propose our advice if we believe it can help.

Q.2. What conditions are necessary for a venture capitalist to be able to add more value in his portfolio company?

Ans: First the Venture Capitalist needs to spend time with the company and be available in order to establish the relationship necessary in every investment.. This is part of his job but it has to be reminded because it implies that a single VC cannot follow 40 investments at the same time. Even if there are many opportunities he has to be selective when investing in order to anticipate the phenomenon.

Second, experience is the key thing. Technical experience will allow the VC to have a clear vision on the business and the technological challenges the management will face. This may be of great help when the management team is focussed on a very specific aspect of the business development without having a strategical view of the situation. Experience in a field also implies a network of expertise you can use to establish contacts between the company you invested in and potential partners (financial institution, experts, key people for recruitment, customer). Of course this is just an help that makes the contact easier. Once the two parties talk together, it is up to the company to convince the other and take the maximum benefit of the opportunity.

Q.3. What conditions are necessary for a portfolio company to able to derive most benefits from the value-added efforts of venture capitalist?

Ans: When investing in a company we pay great attention to the management's ability to listen to external advices. It means that your relation won't be fruitful with somebody that never listen to your suggestions and believes he is always right. On the contrary, somebody too open with no personal opinion on what you say who follows everything you say won't be independent enough to run a company by himself. Only a balanced management will get the maximum of a VC investment.

Q.4. Do you believe that venture capitalists that are more involved in their portfolio companies perform any better? Why/Why not?

Ans: Theoretically yes. The pieces of advice an experienced clever VC brings can only be a plus. There are so many outside aspect that influence the success of a business that it is not a warranty but it has definitely a positive impact.

Q.5. Do you believe that the relation between you and the owner of your portfolio company is a principal/agent relation with you as principal and the owner as your agent? Why/Why not?

Ans: It is a real business partnership, thus we are at the same level as shareholders sharing the same goals of success.

I hope this will help you to have a better view on the position of a VC in Europe. Looking forward to having a first draft on your picture on the Asian VC business, which is not that developed according to what I can see from Paris (Australia...Japan...Taiwan...Singapore).

IDENTITY: CONFIDENTIAL (ON REQUEST)

DATE: MAY 08/2001

COUNTRY: UNITED STATES

Q.1. How do you decide whether your portfolio company needs your assistance?

Ans: It depends on the needs of the portfolio company.

Q.2. What conditions are necessary for a venture capitalist to be able to add more value in his portfolio company?

Ans: The ability to intervene requires either a strong board position or shareholders agreements requiring the investor's consent for certain major decisions such as senior staff appointments, capex, acquisitions, borrowing, exit (sale or flotation); this can also sometimes be achieved more informally subject to the relationship the venture capitalist has with the investee company. The venture capitalist's experience in the fields of financing structures, acquisitions and sales and a particular sector should be helpful also.

Q.3. What conditions are necessary for a portfolio company to be able to derive most benefits from the value-added efforts of venture capitalist?

Ans: Should be receptive to VC advice.

Q.4. Do you believe that venture capitalists that are more involved in their portfolio companies perform any better? Why/Why not?

Ans: Yes but depends on the VC as well.

Q.5. Do you believe that the relation between you and the owner of your portfolio company is a principal/agent relation with you as principal and the owner as your agent? Why/Why not?

Ans: I believe it more like a partnership although in certain cases it can become a principal/agent relation.

IDENTITY: FRANK BACHINSKY, MANAGING PARTNER, VIRIDIAN VENTURES

DATE: MAY 10, 2001

COUNTRY: UNITED STATES

Q.1. How do you decide whether your portfolio company needs your assistance?

Ans: I work with all of them on a one-to one basis.

Q.2. What conditions are necessary for a venture capitalist to be able to add more value in his portfolio company?

Ans: no comment

Q.3. What conditions are necessary for a portfolio company to able to derive most benefits from the value-added efforts of venture capitalist?

Ans: no comment

Q.4. Do you believe that venture capitalists that are more involved in their portfolio companies perform any better? Why/Why not?

Ans: Yes. All companies can benefit from active VC participation.

Q.5. Do you believe that the relation between you and the owner of your portfolio company is a principal/agent relation with you as principal and the owner as your agent? Why/Why not?

Ans: No. I view the relationship more as a partnership with the entrepreneur.

IDENTITY: KEVIN CONNORS, GENERAL PARTNER , SPRAY VENTURE PARTNERS.

DATE: MAY 16, 2001

COUNTRY: UNITED STATES

Q.1. How do you determine whether your portfolio company needs your assistance?

Ans: As an early stage investor, we are active in nearly all of our projects. At the very early stages, the company may not have a CEO or has an incomplete management team. Later, the team may need help in financing or corporate deals. As an active VC, we are involved in these activities every week across our portfolio, whereas a portfolio company management team raises capital every 1-2 yrs.

Q.2. What conditions are necessary for a venture capitalist to be able to add more value in his portfolio company?

Ans: Experience, congruent goals, and compatible operating style and people skills.

Ans: See Q5

Q.3. What conditions are necessary for a portfolio company to able to derive most benefits from the value-added efforts of venture capitalist?]

Ans: Same as Q2 See Q 5

Q.4. Do you believe that venture capitalists that are more involved in their portfolio companies perform any better? Why/Why not?

Ans: Please define involvement. Depends on the experience of the CEO. I believe that if a board of directors is involved, is working with the CEO and management, and is qualified, the

company's odds of success are improved. If the company is orphaned and no one is helping the CEO, probability of success is reduced.

Q.5. Do you believe that the relation between you and the owner of your portfolio company is a principal/agent relation with you as principal and the owner as your agent? Why/Why not?

Ans: Neither. We are partners and co-owners with the founders and management of our portfolio company. We all act in the best interest of all the shareholders. We would not get involved if this "partnership" was not possible.

We work hard to not have the "adversarial" relationship that your questions imply.

